

**Perceptions of Clinical Anxiety Disorders among  
Adolescents in Ireland:  
An Exploration of Anxiety Literacy, Stigma and  
Help-Giving Intentions**



A thesis submitted to the University of Dublin, Trinity College, in partial  
fulfilment of the requirements for the degree of

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By

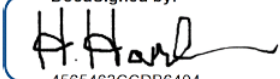
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B.A. (First Class Hons).

2022

**Declaration:**

I declare that this dissertation is entirely my own work and has not been submitted as an exercise for a degree at this or any other university.

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Holly Rose Hanlon

## Summary

Clinical anxiety disorders are among the most common mental illnesses worldwide (WHO, 2017). Anxiety disorders often first emerge in adolescence, and are the most prevalent group of mental illnesses present in adolescents (Kessler et al., 2005; Kessler et al., 2007; Bandelow & Michaelis, 2015). Anxiety disorders often persist into adulthood, and their presence in adolescence predicts negative outcomes in adulthood (Woodward & Fergusson, 2001; Cannon et al., 2013; Essau et al., 2014; Wolitzky-Taylor et al., 2014). Clinical anxiety disorders represent a major burden on both individuals and society, negatively impacting functioning across a variety of areas (Mendlowicz & Stein, 2000; Wittchen & Jacobi, 2005; WHO, 2017). In spite of this, however, they are consistently under-recognised and under-treated; often due to those affected misinterpreting symptoms as being representative of general situational stress rather than a clinical problem (ESEMEd, 2004; Thompson et al., 2008; MacKenzie et al., 2012; Johnson & Coles, 2013; Bellati et al., 2016). Adolescence thus represents a key period in the context of anxiety disorders, providing a potential window for early intervention to improve recognition and understanding of the condition, and in turn improve help-seeking.

Additionally, adolescents tend to favour peer support when dealing with mental illness (Sheffield et al., 2004; Amarasuriya et al., 2017), meaning adolescents often play a key role in supporting peers experiencing mental health difficulties; however, little is known about how adolescents may help their peers displaying symptoms of anxiety disorders. In order to develop effective interventions aimed at improving recognition and understanding of anxiety disorders, gaps in knowledge must first be identified.

One factor which may contribute to the under-diagnosis and under-treatment of anxiety disorders is poor mental health literacy (MHL) around anxiety disorders. Defined by Jorm et al. (1997, p.182) as “knowledge and beliefs about mental disorders which aid their recognition, management or prevention”, MHL to date has been studied primarily in the context of

depression and psychosis. Limited studies examining anxiety literacy in adults tentatively suggest that public understanding of clinical anxiety disorders may be especially low (Coles & Coleman, 2010; Coles, Coleman & Schubert, 2015; Paulus, Wadsworth & Hayes-Skelton, 2015). There is a dearth of research into anxiety literacy generally, and particularly in adolescent samples.

The present study aims to address these research gaps by examining MHL for three clinical anxiety disorders; generalised anxiety disorder (GAD), panic disorder, and social anxiety disorder (SAD) in a sample of adolescents, using a comprehensive measure of MHL. The study also examines stigmatising and help-giving responses toward people with anxiety disorders, and the relationships between MHL, stigma and help-giving. Stigma surrounding mental illness is another major barrier to seeking treatment, as well as having far-reaching impacts on the lives of adolescents experiencing mental health difficulties (Byrne & Swords, 2015; Chandra and Minkovitz, 2007; Gulliver, Griffiths & Christensen, 2010; Moses, 2009; Moses, 2010; Polanczyk, Salum, Sugaya, Caye & Rohde, 2015; Crumb, Mingo & Crowe, 2019). As with anxiety literacy, research into stigma toward people with anxiety disorders in adolescents is severely lacking in the research literature. As such, a cross-sectional within-subjects design was used to address these aims, using a vignette-based survey measure to assess participants' knowledge about, and stigmatising responses and help-giving intentions toward, hypothetical peers with one of three clinical anxiety disorders or a non-clinical condition (situational stress). The measure used a mixture of open-ended and Likert-scale questions, drawn from the literature. Participants were 242 secondary school students (74 male, 165 female, 2 genderfluid and 1 who did not report their gender). Participants ranged in age from 15 to 19 years.

The results of the study provide a complex picture of how adolescents understand and respond to symptoms of clinical anxiety disorders. Adolescents' knowledge of clinical anxiety

disorders was mixed, and varied across the disorders studied. Participants explicit knowledge about anxiety disorders (recognition, causal beliefs, quality of help-giving suggestions) was low, but the majority of participants were able to recognise that the symptoms described in the vignettes were having a significant impact on the hypothetical peer's daily functioning, warranted concern, and that the peer required help in order to cope. Anxiety stigma overall was low, but a minority of participants did endorse harmful stereotypes, express low levels of pity and high levels of fear, and desire social distance from the vignette character. The study explored relationships between components of MHL, stigma and help-giving intentions and demonstrated that, generally, higher levels of anxiety literacy on the various components of MHL measured were associated with lower levels of stigma. Mediation models informed by attribution theory and psychological essentialism (Weiner, 1980; Weiner, 1985; Haslam & Ernst, 2002; Rudolph et al., 2004) describe the potential processes underlying two specific relationships between MHL, stigma, and help-giving. MHL was significantly lower, and stigma was significantly higher, in male participants.

The results of this study have implications for both theory and practice. The study endorses the tripartite model of stigma (Corrigan & Watson, 2002) in an adolescent sample. The study also extends theory to link MHL, stigma and help-giving responses, and models a subset of the relationships between them, providing empirical support for the role of attribution theory. The study has practical implications regarding informing future efforts aiming to improve help-seeking for anxiety disorders, and for improving levels of stigma and help-giving responses by peers toward friends with symptoms of clinical anxiety disorders. By identifying gaps in adolescents' knowledge and understanding of anxiety disorders, interventions can be developed to target these gaps and improve outcomes in future.

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I am immensely grateful for the support and guidance I have received throughout this process from my supervisor, Lorraine. Lori, you have gone above and beyond; thank you so much for the input and knowledge, the late-night corrections, and most importantly, your steadfast support, patience, and reassurance, especially when I hit roadblocks. You are also the only other Kildare person I have ever met in Trinity – it was really nice to have an ally from the sticks in the city.

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I would like to dedicate this piece of work to my Grandad John. He died in 2018, so he never got to see me finish this thesis, but I know he was immeasurably proud of me, even if he wasn't quite sure what exactly I was doing – he told *a lot* of people I that was a lecturer.

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## List of Publications Arising from the Present Research

### Journal Articles

1. Hanlon, H.R. and Swords, L. (2019). Overthinkers, attention-seekers and wallflowers: peer perceptions of clinical anxiety disorders in adolescence. *Journal of Public Mental Health, 18*(1), 4-13. <https://doi.org/10.1108/JPMH-07-2018-0049> (See Appendix A)
2. Hanlon, H. R., & Swords, L. (2020). Adolescent Endorsement of the “Weak-Not-Sick” Stereotype for Generalised Anxiety Disorder: Associations with Prejudice, Discrimination, and Help-Giving Intentions toward Peers. *International Journal of Environmental Research and Public Health, 17*(15), 5415. <https://doi.org/10.3390/ijerph17155415> (See Appendix B)

### Poster Presentations

1. Hanlon, H.R. & Swords, L. (2018) Weirdos, wallflowers and attention-seekers: An Exploratory Study of Adolescents' Perceptions of Peers with Social Anxiety Disorder. *7th European Conference on Mental Health*. Split, Croatia.
2. Hanlon, H.R. & Swords, L. (2019). Centring Young People in Research: Expanding a mental illness stigma measure for use with adolescent populations. *TRICC Trinity Week Research Event: Children Should be Seen and Heard*, TCD, Dublin



### 1.1. Why anxiety disorders?

Anxiety can be a helpful emotion, alerting people to danger and motivating people to prepare for negative outcomes (Gutiérrez-García & Contreras, 2013). However, when feelings of anxiety become disproportionate to the danger faced, or persist after the source of the anxiety has passed, then it may indicate the presence of an anxiety disorder (APA, 2013). Clinical anxiety disorders include a range of disorders which are defined by the presence of excessive fear and anxiety, along with associated changes in behaviour (APA, 2013). Both the DSM-5 and the ICD-11 include generalised anxiety disorder (GAD), panic disorder, agoraphobia, specific phobia, social anxiety disorder (social phobia), separation anxiety disorder, and selective mutism within their classification of anxiety disorders (APA, 2013; WHO, 2018). Obsessive-compulsive disorder (OCD) was previously classified within the category of anxiety disorders, but is now considered separately (Stein et al, 2010; APA, 2013; WHO, 2018).

Anxiety disorders can include cognitive, behavioural and physical symptoms, and the exact nature of these vary by disorder; for example, the cognitive ideation of social anxiety disorder focuses on fear of negative evaluation or rejection by other people, whereas panic disorder involves persistent worry about having future panic attacks (APA, 2013). Recurrent panic attacks are a key feature of panic disorder, which can include unpleasant physical symptoms such as a racing heart, dizziness or shortness of breath (APA, 2013). Other physical symptoms are seen in other disorders, such as fatigue and muscle tension in GAD (APA, 2013). There is high comorbidity among the anxiety disorders, and between anxiety disorders and major depression (Kaufman & Charney, 2000; Chartier, Walker & Stein, 2003).

Clinical anxiety disorders are highly prevalent, affecting an estimated 264 million people worldwide (WHO, 2017). In Europe they are the most common mental disorder, affecting an estimated 25 million people across the EU in a given year (OECD, 2018). Studies have shown that up to 33% of

people will experience an anxiety disorder in their lifetime, placing them among the most common mental disorders (Baxter, Scott, Vos & Whiteford, 2013; Bandelow & Michaelis, 2015). Anxiety disorders are typically chronic in nature, with symptoms occurring over prolonged periods of time, resulting in significant functional impairment for those affected (Mendlowicz & Stein, 2000). Indeed, anxiety disorders have a substantial impact on a wide range of outcomes, from the personal (lowered quality of life, impaired psychosocial functioning) to the wider societal level; anxiety disorders have been ranked the sixth leading cause of disability worldwide, and are a major contributor to the global disease burden as measured by disability-adjusted life years lost (DALY) (Mendlowicz & Stein, 2000; Wittchen & Jacobi, 2005; WHO, 2017).

In Ireland, just under one in five people in Ireland estimated to have a mental health problem in a given year, costing an estimated 3.2% of Irish GDP annually, in the form of direct costs to the health system, increased social welfare and disability costs, and impacts on employment and productivity via mortality, absenteeism and decreased productivity while at work (OECD, 2018). Six percent of the Irish population were estimated to have an anxiety disorder in 2018 (OECD, 2018), though there is a severe lack of comprehensive national data on the exact prevalence and distribution of specific anxiety disorders. A recent study found that among patients presenting to GPs in Ireland, 16% had a documented psychological condition, 47% of which related to stress and anxiety (O'Doherty, et al, 2018). However, specific anxiety diagnoses were not recorded. Harley et al (2015) found that in a sample of young adults in Ireland, 11% of participants currently met the criteria for an anxiety disorder, with 27% having had one at some point in their lives. Specifically, they found that the respective current and lifetime prevalence rates were 1.5% and 15% for panic disorder, 5.4% and 7.3% for social phobia, 5.4% and 10.6% for specific phobia, 2.5% and 6% for obsessive-compulsive disorder (OCD), 0.2% and 5.2% for post-traumatic stress disorder (PTSD), and 2.1% and 5.2% for GAD (Harley et al, 2015). However, this study was limited to young adults aged 19-24, and more comprehensive national data is needed.



Despite the relatively high frequency and burden of anxiety disorders, they are consistently under-recognised and underdiagnosed, with a corresponding low treatment rate across conditions (Kasper, 2006; Johnson & Coles, 2013). Help-seeking for anxiety disorders is low, with the percentage of those with any anxiety disorder who reported seeking treatment for mental health reasons only 26% in Europe and 19% in Canada (ESEMED, 2004; MacKenzie, Reynolds, Cairney, Streiner & Sareen, 2012). Additionally, it has been found that the length of time from first onset of symptoms to seeking treatment anxiety disorders, i.e. the duration of untreated illness, is considerable, ranging from five to eight years (Bellati et al., 2016). Johnson and Coles (2013) found that people with anxiety disorders had significantly longer delays in seeking treatment compared to those with other psychological conditions. This is concerning, as effective treatments for anxiety, such as cognitive-behavioural therapy, exist (Deacon & Abramowitz, 2004; Norton & Price, 2007), and the longer anxiety disorders go untreated, the worse the long-term outcomes and response to treatment (Altamura et al., 2008; Altamura, Camuri & Dell’Osso, 2013).

## **1.2. Anxiety disorders and adolescence**

Mental illness typically first emerges during childhood or adolescence, with half of all mental illnesses presenting by the mid-teens, and three-quarters by the age of 24 (Kessler et al, 2005; Kessler et al, 2007). Anxiety disorders are the most prevalent group of mental disorders seen in adolescents aged 13-17 years, with nearly a quarter of adolescents having experienced an anxiety disorder in the past 12 months, and a median age of onset for anxiety disorders of 11 years (Kessler et al, 2007; Bandelow & Michaelis, 2015). The median age of onset varies across the type of anxiety disorder, with earliest onset for specific phobia and separation anxiety disorder (median onset 7 years), followed by social anxiety disorder (median onset 13 years). There appears to be a later age of onset for other anxiety disorders, particularly GAD, which has a median age of onset of 31 one years (Kessler et al., 2005; Kessler et al., 2007; Bandelow & Michaelis, 2015). However, it has been

noted that some people wait up to ten years before seeking treatment for mental illness, and that less severe cases are often present for many years before they are brought to the attention of clinicians (Kessler et al, 2007). This is especially true of GAD, which has a long duration from first symptom onset to initial help-seeking (Thompson, Issakidis & Hunt, 2008). Nonetheless, late adolescence has been found to be a core period for the first onset of panic disorder, GAD, and agoraphobia (Beesdo, Knappe, & Pine, 2009).

Research into prevalence of mental illness in general, and anxiety disorders in particular, among adolescents in Ireland has been lacking until relatively recently, and most quality large-scale studies into youth mental health have had a broader focus, rather than capturing the prevalence of specific disorders. For example, in the recent My World 2 Survey, a national survey of youth mental health in Ireland which surveyed 19,000 young people aged 12-25, 40% of the sample were found to be outside of the normal range for symptoms of depression (as categorised by the Depression Anxiety Stress Scales (DASS); Lovibond & Lovibond, 1995; Crawford & Henry, 2003), 23% had engaged in deliberate non-suicidal self-harm, 41% reported experiencing suicidal ideation in the past, and 6% had made a previous suicide attempt (Dooley, O'Connor, Fitzgerald & O'Reilly, 2019). With regard to anxiety, half (49%) of those surveyed fell outside the normal range for symptoms of anxiety, with 18% experiencing moderate anxiety, and 21% experiencing either severe or very severe levels (Dooley et al., 2019). Female participants were less likely to have normal anxiety levels than males (Dooley et al., 2019). While this study did not examine specific psychiatric diagnoses, it does suggest that anxiety is a major issue for adolescents in Ireland.

Few studies have examined the prevalence of specific mental disorders in detail in adolescent populations in Ireland. Lynch, Mills, Daly and Fitzpatrick (2006) examined mental health in young adolescents (aged 12-15 years) and found that 15.6% met the criteria for a current psychiatric disorder, and 3.7% were experiencing a clinical anxiety disorder at the time of the study. The authors did not report prevalence rates for individual anxiety disorders. In contrast, a large

national longitudinal study carried out by the Royal College of Surgeons of Ireland found higher numbers of young people experiencing mental ill-health (Cannon, Coughlan, Clarke, Harley & Kelleher, 2013). By age 13, a third of participants had experienced some type of mental disorder, with this rising to half of participants by the age of 24 (Cannon et al, 2013). The study comprised two groups, young adolescents (aged 11-13 years) and young adults (aged 19-24 years). In the young adolescent sample aged 11-13, 15.4% had a current mental disorder, with 31.2% experiencing a mental disorder at some point in their lifetime; suggesting that Irish adolescents may have higher rates of mental disorders than their same-age counterparts in the USA, where rates were closer to 25% (Cannon et al., 2013; Bandelow & Michaelis, 2015).

Anxiety disorders were among the most prevalent disorders experienced by young adolescent participants; 19% had a current anxiety disorder, with a lifetime prevalence of 23% (Cannon et al., 2013). Specific phobia, particularly common in younger populations, was particularly prevalent, at 12.8%. GAD, social phobia and separation anxiety disorder were each reported by 1 in 20 young adolescents (Cannon et al., 2013).

There is a distinct dearth of high-quality, nationally representative research into prevalence of specific clinical anxiety disorders in adolescents in Ireland, particularly in the mid-to-late adolescent age group. However, it is clear from the research that has been conducted that clinical anxiety disorders are experienced by significant proportions of adolescents in Ireland. In spite of the high prevalence both globally and nationally, anxiety disorders remain relatively under-recognised and under-treated among adolescents, with international research showing that less than one in five of those with an anxiety disorder seek professional help (Merikangas et al., 2011). The tendency for adolescents to favour avoidance strategies in coping with anxiety may partially explain the large numbers of cases going untreated (Esbjörn, Hoeyer, Dyrborg, Leth & Kendall, 2010). The specific burden of anxiety disorders on the everyday lives of adolescents has been found to span many metrics, with affected adolescents experiencing significant impairment in their daily lives and

activities, with decreased social and leisure functioning, lower levels of self-esteem, lowered productivity and school functioning, and higher levels of premature school withdrawal than peers without an anxiety disorder (Wittchen, Nelson & Lachner, 1998; Essau, Conradt & Petermann, 2000; Ameringen, Mancini & Farvolden, 2003; Mychailyszyn, Mendez & Kendall, 2010; Maldonado et al., 2013).

Adolescence is also a crucial period of study in the context of anxiety disorders, as the presence of clinical anxiety disorders and sub-clinical anxiety symptoms in adolescence is predictive of the presence of the same disorders in adulthood (Cannon et al., 2013; Wolitzky-Taylor et al., 2014).

The experience of anxiety disorders in adolescence has also been significantly associated with other negative outcomes in adulthood, including poor overall adjustment, adjustment at work, educational underachievement, depression, poorer familial relationships, a lower level of overall life satisfaction, a higher level of chronic stress, and increased rates of substance and alcohol abuse and dependence at age 30 (Woodward & Fergusson, 2001; Essau, Lewinsohn, Olaya & Seeley, 2014). Anxiety disorders are chronic in the majority of adults (Yonkers, Bruce, Dyck & Keller, 2003), and thus adolescence represents an important potential opportunity for understanding the development of anxiety disorders across the lifespan, as well as the potential for influencing the course of the disorders through early intervention

### **1.3. Why mental health literacy?**

It has been suggested that the low rates of treatment-seeking for anxiety disorders may be partly due to a tendency not to perceive symptoms of anxiety disorders as being mental illness; for example it has been found that GAD sufferers usually do not seek help until the problem is severe or begins to produce physical symptoms, often because they do not recognise initial symptoms as indicative of a mental illness (Thompson et al., 2008). The same study found that clinical anxiety symptoms are often mislabelled by patients as being due to stress. Similarly, patients with panic

disorder often initially present to emergency departments, believing their symptoms to be caused by a physical medical condition (Bandelow & Michaelis, 2015).

A potential contributing factor for the under-recognition and low rates of help-seeking for anxiety disorders by those affected is poor mental health literacy around anxiety disorders among the general public. Mental health literacy in general refers to the knowledge and understanding of mental illness. The term was first introduced by Jorm et al. (1997, p. 182), who defined it as “knowledge and beliefs about mental disorders which aid their recognition, management or prevention”, with the concept spanning elements such as recognition of disorders, beliefs about the need for help, causal attributions, and suggested sources of help, among others. (Jorm, 2000; Jorm, 2012).

While the measures of mental health literacy have varied across studies in terms of the breadth and scope of the concept (discussed in more detail in further chapters), a general picture of the relationship between poor understanding and knowledge of mental illness and various outcomes has emerged in the research literature. Low mental health literacy has been found to be a major barrier to help-seeking; if a person cannot recognise symptoms as being a mental illness, they are less likely to seek appropriate help (Wright, Jorm, Harris & McGorry, 2007; Gulliver, Griffiths & Christensen, 2010; Wright, Jorm and Mackinnon, 2012).

Mental health literacy has also been linked to stigmatising responses to mental illness, although the results outlined in the literature on this are mixed, which may be due to differences in stigma measurement across studies. Stigma has been conceptualised in many different ways, with the components of negative stereotypes (e.g., dangerousness), prejudice (negative emotional reactions), and discrimination often included, as per the tripartite model of stigma outlined by Corrigan and Watson (2002), with other components, such as cognitive separation included in other models (e.g., Link and Phelan, 2001; 2006).

Incorrect beliefs about the causes of mental disorders in particular have been shown to increase stigmatising responses (Reavley & Jorm, 2014; Yoshioka, Reavley, Rossetto & Nakane, 2016), while accurate labelling of mental disorders has been found to predict lower levels of some harmful stereotypical beliefs about people with mental illness, and increased levels of others, varying across disorders (Wright, Jorm & Mackinnon, 2011). Experience of stigma by those with mental illnesses is also associated with reduced help-seeking (Gulliver, Griffiths & Christensen, 2010), suggesting that there may be more than one route for mental health literacy to impact rates of help-seeking. Finally, mental health literacy has also recently begun to be studied in the context of its relationship to help-giving. Studies have shown higher mental health literacy has been associated with better help-giving responses (Mason, Hart, Rossetto & Jorm, 2015; Amarasuriya, Reavley, Rossetto & Jorm, 2017).

However, anxiety literacy specifically has been largely neglected in the research literature, with the majority of studies focusing on depression or schizophrenia (e.g. Jorm, 2000; Yoshioka, Reavley, Rossetto & Nakane, 2016), or only including one type of anxiety disorder, most frequently social phobia/social anxiety disorder (e.g. Reavley & Jorm, 2011a; Reavley & Jorm, 2014). Post-traumatic stress disorder (PTSD) has also been included in some studies, although it is no longer categorised as an anxiety disorder in the most recent edition of the DSM, DSM-V (APA, 2013). The limited research which has specifically looked at anxiety literacy has shown that mental health literacy for anxiety disorders may be particularly low (Coles & Coleman, 2010; Paulus, Wadsworth & Hayes-Skelton, 2015), and that knowledge may vary across different anxiety disorders (Coles, Coleman & Schubert, 2015).

The lack of research in this area, in combination with the prevalence and impact of anxiety disorders, indicates a need for studies to assess the level of knowledge around clinical anxiety disorders in detail, as low anxiety literacy may be a significant barrier to help-seeking. In addition,

the relationship of anxiety literacy to stigmatising and help-giving responses needs to be examined further in order to identify potential targets for improvement.

#### **1.4. Why adolescent MHL?**

One subgroup of the population in which the study of mental health literacy in general (and anxiety literacy specifically) has been particularly neglected is adolescents. This is especially concerning given the fact that adolescence is the time at which anxiety disorders tend to initially emerge (Kessler et al., 2005; Bandelow & Michaelis, 2015). This time period thus represents a key opportunity for early intervention, before disorders become chronic. Improving anxiety literacy at this early stage has the potential to increase the likelihood that adolescents recognise their problem and access appropriate help (Gulliver, Griffiths & Christensen, 2010).

Additionally, peer relationships are extremely important in this age group, with peer-rejection negatively impacting wellbeing (Rubin, Bukowski & Bowker, 2015). Stigmatising responses to anxiety disorders should be assessed and examined in relation to anxiety literacy in order to identify ways in which to improve the experiences of those with anxiety disorders. Finally, it has been consistently found that adolescents prefer to seek help from informal sources such as friends (Amarasuriya, Reavley, Rossetto & Jorm, 2017), meaning that peers are often a vital initial source of help for those experiencing difficulties. Previous research into help-giving responses to depression have shown the quality of suggestions by adolescents to be low, with a majority failing to recommend involving an adult (Byrne, Swords & Nixon, 2016; Amarasuriya et al., 2017). However, relatively little is known about the mental health knowledge of these peer “first-responders”, or about their help-giving responses regarding anxiety disorders. Therefore, it is

necessary to address this research gap with a view to developing interventions to improve help-giving responses by peers.

### **1.5. Sign-posting for further chapters**

In this dissertation I will examine adolescent anxiety literacy in-depth across three clinical anxiety disorders; generalised anxiety disorder, panic disorder and social anxiety disorder, as well as a non-clinical control in the form of situational stress. I will also discuss stigmatising and help-giving responses to each disorder, and examine the relationships between elements of these three constructs in order to build a comprehensive picture of how adolescents understand and react to symptoms of clinical anxiety in their peers.

Chapters 2, 3 and 4 will review the literature surrounding anxiety literacy, stigma towards people with anxiety disorders, and the relationships between components of mental health literacy, stigma, and help-giving intentions and help-giving efficacy respectively. Chapter 4 will both review studies which have examined relationships between MHL, stigma, and help-giving, and discuss the potential theoretical underpinnings of a subset of these relationships, as informed by attribution theory and psychological essentialism.

Attribution theory and psychological essentialism have both been implicated in the study of MHL, stigma, and help-giving, and how they relate to each other. Attribution theory, developed by Weiner, focuses on the effect of beliefs about the cause of a problem on behavioural responses (Weiner, 1985). Specific causal beliefs about mental disorders have been associated with perceptions of personal responsibility and blame; which in turn have been associated with increased stigmatising and reduced help-giving responses towards those with mental disorders (Weiner, 1980; Weiner, 1985; Dolphin & Hennessy, 2014; Haslam & Kvaale, 2015).

Psychological essentialism principally refers to a tendency for people to incorrectly view social categories “as if they are essence-based “natural kinds” – groupings that are taken to be fixed and potent sources of inference about their members” (Haslam & Ernst, 2002, pp.630). Essentialist



thinking about a particular group implies that members of that group are fundamentally different to those outside the group, and that this difference is rooted in something naturally occurring, and is enduring and unchangeable (Haslam & Ernst, 2002). Essentialist thinking has been associated with increased prognostic pessimism (i.e., believing that a condition is stable and long-lasting) and, in turn, with increased stigma and reduced help-giving intentions, although this relationship has varied depending on a person's relationship to the person experiencing mental illness (Levy et al., 1998; Haslam & Ernst, 2002; Muschetto & Siegel, 2019). These theoretical perspectives and their relation to MHL, stigma and help-giving will be discussed in detail in Chapter 4.

Chapter 5 will describe the method. This will include discussion of the study design, survey development, pilot study, recruitment, and details of the study participants and procedure.

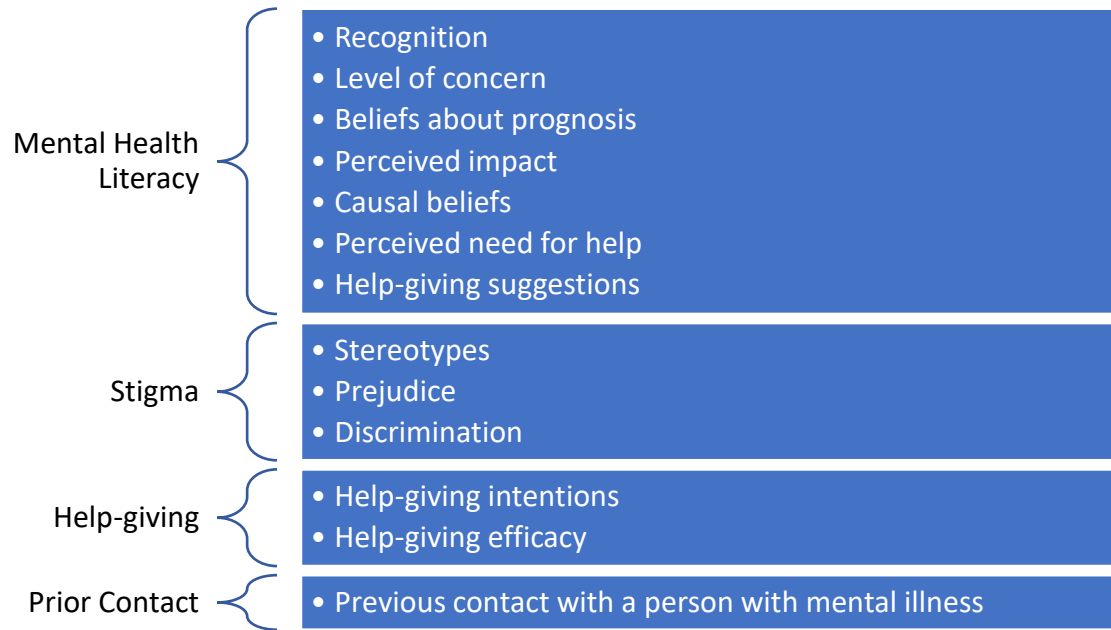
Chapters 6 and 7 will outline the results and discussion of participants' knowledge and understanding of clinical anxiety disorders in the present study (i.e., their anxiety literacy).

Chapters 8 and 9 will outline the results and discussion of participants' stigmatising responses toward those with clinical anxiety disorders. Chapter 10 will summarise participants' help-giving intentions and help-giving efficacy, and present the results of analyses investigating the relationships between components of MHL, stigma, help-giving intentions, and previous contact with a person with mental illness, with research questions both based on previous literature and exploratory in nature. Chapter 11 will discuss these results. Chapter 12 will present the results of theory-driven mediation models of the relationships between specific components of MHL, stigma, and help-giving intentions, informed by psychological essentialism and attribution theory. Chapter 13 will discuss these results.

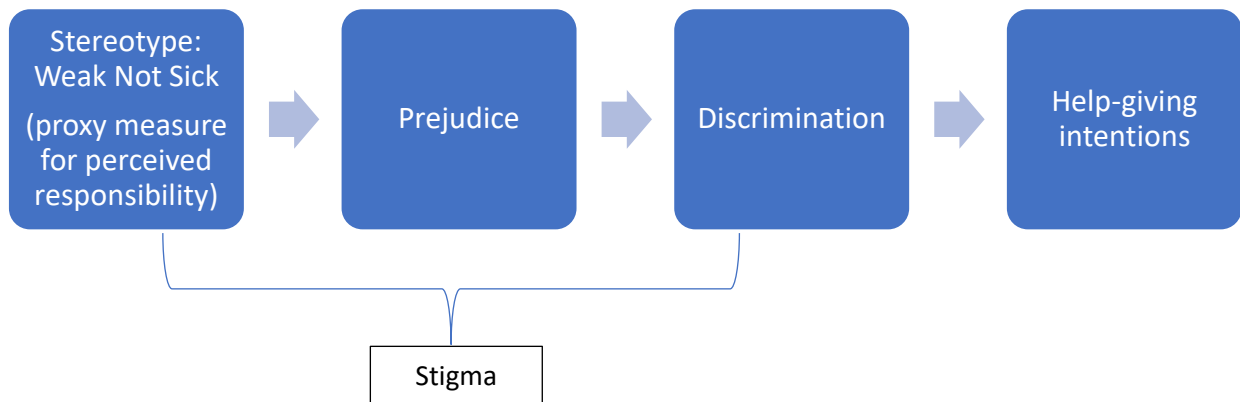
Chapter 14, the general discussion, will discuss all of the results of the present study to draw together a "big picture" of participants' knowledge, beliefs, and feelings about clinical anxiety disorders in a hypothetical peer, and discuss what this research tells us about the relationship

between components of MHL, stigma and help-giving intentions. Chapter 14 will also discuss the implications and limitations of the present study.

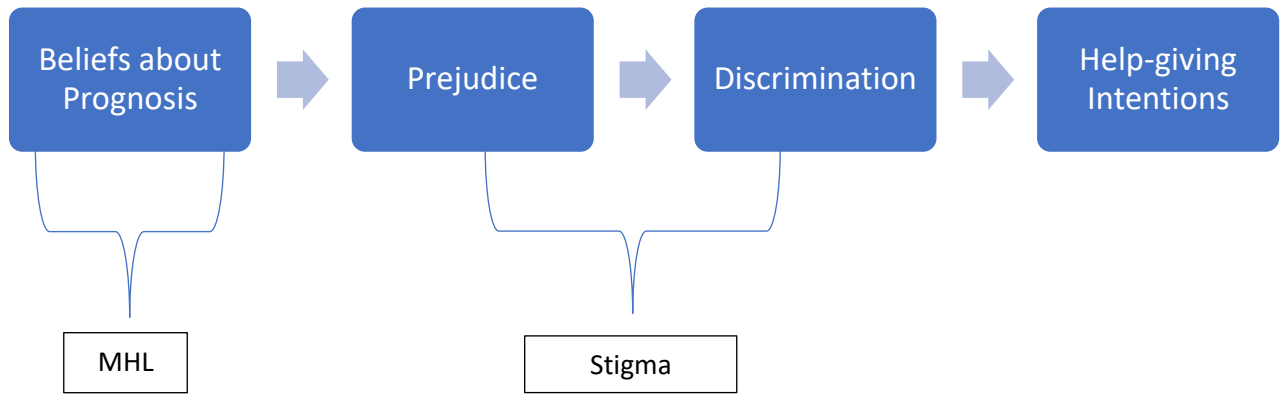
The components of MHL, stigma, and help-giving included in the present study are outlined in the conceptual framework below (see Figure 1.1). A broad overview of the theoretical models to be conducted based on attribution theory and psychological essentialism can be found in Figure 1.2 and Figure 1.3 (below).



*Figure 1.1. Key components relating to MHL, stigma, help-giving and previous contact with a person with mental illness included in the present study*



*Figure 1.2. Example of model informed by attribution theory examining the relationship between stigma and help-giving intentions*



*Figure 1.3. Example of model informed by psychological essentialism examining the relationship between MHL, stigma, and help-giving intentions*

## Chapter 2: Mental Health Literacy: Concept and Literature Review

### 2.1. What is Mental Health Literacy?

In physical health research, it is generally agreed that a person in possession of knowledge about disease and health behaviours is better equipped to both prevent ill-health and recognise and intervene early and appropriately in the case of illness (Berkman et al., 2011).

Health literacy (HL) as a concept first emerged after studies demonstrated that low functional literacy, i.e. basic reading and writing skills, was associated with negative health outcomes (Dewalt et al., 2004; Kutcher, Wei & Coniglio, 2016). Initially a narrow concept focusing on the ability of patients to read and understand health information, the definition of health literacy has since been expanded to encompass a broader public health perspective; a recent conceptualisation by the World Health Organisation states that HL refers to a number of competencies relating to accessing, understanding, evaluating and applying information relating to health care, disease prevention and health promotion (Sorensen et al., 2012; WHO, 2013). Low health literacy has consistently been linked to worse health outcomes; more frequent hospitalisations, lower medication adherence, less use of screening programmes and vaccinations, more negative health behaviours and higher overall mortality (Dewalt & Hink, 2009; Berkman et al., 2011).

As a result of the health literacy perspective, a major focus of public health policy is to arm the public with health-based information in order to improve survival and general health. The aims of such interventions and public health campaigns have ranged from improving public recognition of medical emergencies such as heart attack and stroke, to improving knowledge around the *prevention* of health problems, by encouraging positive health behaviours, such as healthy diet and exercise, and discouraging risky health-behaviours, such as tobacco smoking and unsafe sex, with positive results (Wakefield et al., 2008; Wakefield, Loken & Hornik, 2010; Flynn et al., 2014)

Building on the health literacy approach, over the past two decades there has also been increased interest in researching the public knowledge surrounding *mental* illness; that is, the concept of mental health literacy. The term “mental health literacy” (MHL), was first coined by Anthony Jorm, and was initially defined as “*knowledge and beliefs about mental disorders which aid their recognition, management or prevention*” (Jorm et al., 1997, pp.182). In the ensuing two decades, Jorm has expanded this definition of MHL to include a number of components spanning the ability to recognise mental disorders and knowledge of help seeking and self-help options, to first aid skills to help support people experiencing mental health problems (Jorm, 2000; Jorm, 2012). Reavley and Jorm (2011a) state that mental health literacy incorporates the “*ability to recognise specific disorders, knowledge of causes, risk factors, self-treatments and available professional help, as well as attitudes that promote recognition and appropriate help-seeking*” (Reavley & Jorm, 2011a, pp. 947).

In the majority of their studies, it appears that by “*attitudes that promote recognition and appropriate help-seeking*” (Reavley & Jorm, 2011a, pp. 947), Jorm and colleagues are referring specifically to perceptions of the helpfulness of various professional treatments and other forms of help, rather than broader attitudes about mental illness in general, as no other attitude measures are included (Reavley & Jorm, 2011a; Reavley, Morgan & Jorm, 2014). However, in previous work discussing the conceptualisation of MHL, Jorm has explicitly referenced stigma under the MHL umbrella. For example, in a narrative review discussing the components of MHL, Jorm (2000) discusses mental illness stigma under the heading of “*attitudes that facilitate recognition and help-seeking*”, in the context of the impact stigmatising attitudes may have on public discussion of mental illness, and help-seeking (pp. 398).

Other researchers have continued to expand the definition of MHL further. A recent review examines the growth of the mental health literacy construct, and defines MHL as “*understanding how to obtain and maintain positive mental health; understanding mental disorders and their*

*treatments; decreasing stigma relating to mental disorder; and enhancing help-seeking efficacy (knowing when and where to seek help and developing competencies designed to improve one's mental health care and self-management capabilities)."* (Kutcher, Wei & Coniglio, 2016, pp.155).

These broader definitions of MHL, which explicitly contain elements such as stigma, or help-seeking efficacy as components, have been subject to criticism. Spiker and Hammer (2018) have argued that the expansion of the mental health literacy construct in recent years beyond Jorm's (1997) original definition, by researchers such as Kutcher et al (2016), is actually impeding the growth of research in the area. They note that the inclusion of these additional elements as part of the MHL construct, rather than sticking to a narrower conceptualisation of mental health knowledge, violates the principles of good construct definition by incorporating elements of already established constructs with their own existing literature base. This, they argue has led to inconsistencies in MHL definition and measurement across studies, and confusion when it comes to the correlation of MHL with other constructs; some studies may include, for example, stigma under the umbrella of MHL (e.g. Kutcher, Bagnell & Wei, 2015), whereas others do not, preferring to conceptualise MHL solely in terms of mental health knowledge (e.g. Coles et al., 2016).

It is suggested that recent research, by including stigma, positive mental health and help-seeking efficacy as being part of MHL, "simply repackages these well-established constructs into a broader construct with a new name (i.e. construct proliferation)" (Spiker & Hammer, 2018, pp.2). Instead, they argue, that MHL should be reconceptualised as "*a multi-construct theory rather than a multidimensional construct*", which would allow for the constructs of mental health knowledge, stigma, help-seeking and others to be kept "*separate, narrow and concise*" (Spiker & Hammer, 2018, pp.3).

Indeed, the measures and conceptualisations of MHL used across different studies in this area are diverse and inconsistent; ranging from studies focusing on a limited few MHL components, such as ability to label a disorder and knowledge of treatments (Wright, Jorm, Harris & McGorry, 2007) to

studies aiming to capture a more comprehensive and nuanced picture of people's overall knowledge of mental illness by including measures such as perceived symptom severity (Paulus, Wadsworth & Hayes-Skelton, 2015) to the more broad, nebulous characterisations of MHL that pull in existing constructs such as stigma (Kutcher, Wei, McLuckie & Bullock, 2013). This makes comparisons of the results of different studies difficult, as they may use measures which tap into different distinct components of MHL (e.g. a focus on recognition versus knowledge about prognosis), or which use different measures for the same component (e.g. open-ended questions about suggestions for help, versus asking participants to rate the helpfulness of different treatments).

These methodological and conceptual issues must be considered when reviewing the existing literature on mental health literacy. The following section will consist of a review of the existing literature on mental health literacy in general, and adolescent anxiety literacy specifically.



## **2.2. Reviewing the Existing Literature on Mental Health literacy**

### *2.2.1 Background*

Although the measures and components of MHL included in studies into this topic have been wide-ranging, they generally include one or all of the following components; 1) Recognition of mental illness, often in the form of ability to label a disorder based on a vignette, 2) beliefs about causality 3) recognition of the need for help, 4) level of concern or worry for the person, 5) perceived severity of the symptoms, 6) prognosis judgments and 7) knowledge of appropriate help. The majority of studies into MHL have used clinical symptom-based vignettes to elicit information about the public's knowledge of mental illness and its treatment (Jorm et al., 1997; Burns & Rapee, 2006; Reavley & Jorm, 2011a; Furnham, Ritchie & Lay, 2016).

Most initial studies examine adult MHL, relating to major depression and psychosis or schizophrenia, and focus on recognition of disorders, knowledge and beliefs about causality, and knowledge of appropriate help. Research into how well people can recognise and name mental disorders has produced mixed results. One early study into public conceptions of mental illness found that the majority of participants could recognise vignette descriptions of depression and schizophrenia to be mental illnesses, while they did not identify a control scenario of a person experiencing sub-clinical difficulties to be suffering from a mental illness, suggesting that the public can discriminate between clinical and non-clinical conditions (Link, Phelan, Bresnahan, Stueve & Pescosolido, 1999). A large majority of participants were also found to correctly identify the specific label for both disorders. However, the study used forced-choice questions; participants were explicitly asked if the person in the vignette was suffering from a mental illness, and then to choose the specific label from a list (Link et al., 1999). This format may artificially inflate the level of correct recognition by priming the participants to think about mental illness rather than assess their ability to label the condition themselves.

Indeed, recognition of depression and schizophrenia were found to be far lower when examined using open-ended questions in an early study by Jorm et al (1997). Most participants recognised the presence of a general mental health problem but only a minority used the correct label; 39% correctly identified depression, while only 27% correctly labelled schizophrenia. Alternate explanations such as stress, or physical illness were given, particularly for the depression vignette. The low levels of recognition for depression and schizophrenia in these early studies may reflect a time in which informing the public about mental illness was not a major priority; public health campaigns around mental illness and mental health generally have increased in the last decade compared to the 1990s, most notably the Time to Change initiative in the United Kingdom (Evans-Lacko et al., 2014). Certainly, more recent studies have found better rates of recognition of depression and schizophrenia, however, sizeable minorities continue to fail to recognise these disorders; Furnham, Ritchie and Lay (2016), for example, found that a majority of participants could correctly recognise two vignette case studies of depression – however around 30% could not. Recognition may also depend on the cultural context; in a recent study of public MHL in China, Huang, Yang and Pescosolido (2019) found that levels of public recognition of schizophrenia and depression were low overall, but better for depression than schizophrenia. Most studies into recognition of mental disorders have used vignette-based measures, though a few studies have also examined public understanding of psychiatric terminology, and found it to be lacking. For example, the general public understanding of the terms “mania” and “schizophrenia” has been found to be poor, with schizophrenia frequently incorrectly understood to mean split personality (Brandli, 1999; Jorm, 2000)

Overall, the early MHL studies into public recognition of mental disorders have found ability to identify disorders to be mixed; generally, most people appear able to recognise the presence of a general mental health issue, but a sizeable number are not able to provide specific labels, although this varies by disorder, by question type used, and may be improving over time (Reavley & Jorm, 2012; Link et al., 1999; Furnham et al., 2016).

In addition to assessing recognition, much of the research into MHL examines the perceived causes of mental illness among the general public. Causal beliefs have been studied prior to the introduction of the MHL construct; for example, McKeon and Carrick (1991) found stress to be the most frequently mentioned cause of depression (by nearly two thirds of participants), followed by bereavement. Heredity, in contrast, was mentioned by just 13% of the sample. Environmental factors such as stress have frequently been favoured as perceived causes for both schizophrenia and depression (Link et al., 1999; Jorm, 2000). Link et al (1999), while finding that stress was the most commonly endorsed cause for both depression and schizophrenia, also found that most participants favoured more complex, multi-causal explanations, with stress often being combined with biological factors. The current widespread consensus on the aetiology of anxiety disorders is that their development is influenced by multiple factors; psychosocial, genetic, and neurochemical (Zwanzger & Deckert, 2010).

As with other aspects of MHL, beliefs about causality are likely to differ by disorder. In an early study by Matschinger and Angermeyer (1996), participants were asked to choose what they believed to be the cause of depression, schizophrenia and borderline personality disorder (BPD), from a list of potential causes. Stress, and individual factors such as perceived personal weakness, were most frequently chosen as the cause of schizophrenia, with similar results for depression. In contrast, BPD was most attributed to internal factors such as personality by 80% of participants. Schizophrenia was more likely to be attributed to biological causes than depression.

Similar results have been found in a study of university students in South Africa, in which respondents tended toward biological/neurochemical explanations for schizophrenia, but viewed stressful events as a major cause of depression (Samouilhan & Seabi, 2010). The same study found that participants favoured social causes in the case of anorexia nervosa. More recent work has also demonstrated that environmental or situational factors are consistently rated as the most likely cause for depression by the general public (Furnham, Ritchie & Lay, 2016). Nevertheless, research

has shown a shift toward endorsing biological explanations at higher rates for these conditions over the past few decades (Schomerus et al., 2012). This systematic review found an increase in attributions of mental disorders to underlying biological factors over time across studies; however psychosocial and environmental attributes have also remained high.

The research into causal attributions for mental illness thus far emphasises that the public appears to conceptualise mental disorders differently in terms of their origins; with environmental or situational causes favoured for depression, and underlying biological or neurochemical explanations more likely for psychosis or schizophrenia (e.g., Matschinger & Angermeyer, 1996; Samouilhan & Seabi, 2010). More research is needed to examine the underlying reasons for the differences in causes endorsed for different mental illnesses; it may be that the symptoms of schizophrenia, such as hallucinations, are seen as more serious or out of the ordinary, and thus less easily attributable to situational causes, however no firm conclusions can be drawn based on the existing research.

When examining the public's knowledge of appropriate help for mental illness, researchers have used multiple methods and measures of assessment. Participants' ability to recognise the need for professional help has been assessed by either asking participants outright if the person needs help, or by asking participants to choose an appropriate help source from a list, while knowledge and perceptions of specific treatments have been explored primarily through asking participants to rate specific treatment in terms of helpfulness (McKeon & Carrick, 1991; Jorm et al., 1997; Samouilhan & Seabi, 2010).

Other studies have examined mental health first aid responses. Jorm, Wright and Morgan (2007) have defined mental health first aid as "the help provided to a person developing a mental health problem or in a mental health crisis. The first aid is given until appropriate professional treatment is received or until the crisis resolves" (Jorm et al., 2007, p.61). Studies of mental health first aid have measured actual mental health first aid actions taken by people in their real lives, mental

health first aid beliefs about the helpfulness of particular help-giving actions, and mental health first aid intentions; i.e. what a person would do themselves to help a friend with symptoms of mental illness. The latter kind of open question likely taps into participants' knowledge and beliefs about which types of help are likely to be appropriate and useful, and tends to result in suggestions for both formal and informal forms of help (e.g. Jorm, Blewitt, Griffiths, Kitchener & Parslow, 2005).

Accordingly, with such varied methodology, the findings in this area have been mixed. An early study by McKeon and Carrick (1991) using an open-ended question indicated that a majority of participants recognised the need for help, with 81% giving suggestions that fell into the "interventionist" category; including counselling, medication, visiting a GP etc. (McKeon & Carrick, 1991, pp. 118). Another early study, by Angermeyer and Matschsinger (1996a) which asked participants to recommend or advise against particular treatments, found that the public generally favoured psychotherapy and rejected pharmacological treatments, for a variety of disorders. They further found by asking follow-up questions that people's negative views of pharmacological treatments were largely informed by their knowledge of particular classes of drugs (tranquilizers) with significant (sedating) side effects, suggesting a level of misinformation about psychotropic drugs among the public at this time (Angermeyer & Matschsinger, 1996a).

Similarly, in a study by Jorm et al (1997) which asked participants to rate various treatments and professionals, standard psychiatric treatments (medications, hospitalisation, ECT) were most often rated as harmful, while non-clinical or informal treatments such as reducing stress, increasing exercise and relaxation were rated highly. As with other components of MHL, help-giving knowledge and perceptions has been found to vary by disorder; for example, the kinds of professionals recommended varied depending on depression, for which the majority favoured GPs and counsellors as helpful, versus schizophrenia, for which counsellors, psychologists, psychiatrists and GPs were preferred (Jorm et al., 1997). Subsequent studies have supported this pattern of

participants appearing more likely to recommend specific mental health professionals for schizophrenia and psychosis compared to depression, as well as negative perceptions of psychiatric medications across mental disorders among the public (Jorm, 2000).

Lauber et al. (2001) also examined ratings of treatments as helpful or harmful for schizophrenia and major depression, and found that people rated psychologists, psychiatrists, GPs and “fresh air” as being helpful. Additionally, with regard to specific interventions, participants rated psychotherapy as being helpful, but considered psychiatric medications to be harmful. This further supports the findings of previous studies and suggests that across disorders, people may recognise the need for help from professionals (doctors, mental health professionals) while simultaneously disapproving of the actual treatments these professionals provide, such as medication and inpatient treatment (Angermeyer & Matschinger, 1996a; Jorm et al 1997; Jorm, 2000). Again, recommendations varied by disorders, with psychiatrists more likely to be viewed as helpful for schizophrenia than for depression, as were the specific interventions of hospitalisation and psychotherapy (Lauber et al., 2001). Recommendations for help also varied by how participants contextualised the symptoms; participants who viewed the person in the vignettes as suffering a “life crisis” as opposed to a mental illness were significantly less likely to recommend professional treatments, suggesting that ability to recognise a problem and causal beliefs may influence how people assess the need for professional help. (Lauber et al., 2001, pp.555). It may well be the case that some disorders are more likely to be dismissed as situational than others; it has already been demonstrated that the public are more likely to view symptoms of depression as being due to situational causes than they are for schizophrenia (Matschinger & Angermeyer, 1996; Samouilhan & Seabi, 2010).

In a study examining the mental health first-aid responses of the public using open-ended questions across depression, depression with suicidal thoughts, early schizophrenia and chronic schizophrenia, Jorm et al (2005) found that the most commonly suggested action across all

disorders was to recommend professional help; although this was most frequent for chronic schizophrenia. Responses relating to the assessment of risk and obtaining further information about the disorder were far less frequent. The authors note that a significant proportion of the participants did not suggest professional help at all, in contrast to findings from studies which use forced-choice questions (Jorm et al., 2005).

More recent studies in this area have found broadly similar results; Samouilhan & Seabi (2010) found that the top-rated type of help across four disorders was professional psychological help, but that this was still endorsed by less than half of participants. A systematic review by Schomerus et al (2012) found that over time there has been an increase in findings demonstrating recommendations of professional help for mental health problems by the public; including improved attitudes toward psychiatric medication, in contrast to earlier findings. Furnham, Ritchie and Lay (2016) examined suggestions for help across two vignettes describing different presentations of depression; one without suicidal thoughts, and one with suicidal thoughts. For the first vignette between 30-40% of participants suggested a doctor, medication, a mental health professional or therapy. This increased to half of participants endorsing one of these options for the second vignette which explicitly mentioned suicidality. This demonstrates the impact that specific symptoms such as suicidal ideation may have on perceptions of appropriate help, although half of the sample still did not suggest professional help for the second vignette despite clear depiction of suicidality (Furnham et al., 2016).

In general, regardless of methodology, the majority of early studies in this area have shown that people do recognise the need for help from another person for mental illness, and tend to rate mental health professionals as being helpful when given the option. However, despite a general consensus about the helpfulness of therapy, there are consistent findings that people view many of the interventions employed by mental health professionals, such as medication and hospitalisation, in a negative way, while expressing positive views of more informal treatments

(Jorm, 2000; Lauber et al., 2001; Furnham et al., 2016). This may reflect fears about potential side-effects of psychiatric medications (Schomerus et al., 2014) and negative perceptions of psychiatric inpatient services, likely fuelled by harmful portrayals in media (Stuart, 2006). Recommendations and endorsement of various types of help have consistently varied depending on the disorder studied, with participants tending to support professional help and more medically-grounded interventions for schizophrenia and depression with suicidal thoughts than for depression without suicidal thoughts, suggesting that participants may conceptualise disorders without overtly alarming symptoms as being less serious (Jorm et al., 2005; Furnham et al., 2016).

Overall, initial studies into public MHL have found mixed results in terms of recognition, knowledge of causality and knowledge of appropriate help; across these components the level of MHL has varied depending on methods used and disorder examined, with higher recognition, more correct causal attributions and more appropriate help-giving knowledge for disorders such as psychosis that have more overt symptoms (e.g. Matschinger & Angermeyer, 1996; Jorm et al., 1997; Link et al., 1999).

Across the literature, a sizeable proportion of people appear to have low or insufficient knowledge and understanding of MHL in general (Jorm et al., 1997; Link et al., 1999; Samouilhan & Seabi, 2010; Furnham et al., 2016). However, much of the initial and subsequent research examining the public's mental health literacy has been limited in scope, focusing on knowledge of depression and schizophrenia to the neglect of other disorders. As MHL has been clearly shown to vary between just these two disorders (see above), it is likely also the case that there are unique MHL findings for other disorders less frequently examined in the literature. Additionally, the majority of studies in the area initially focused on a few limited components of MHL, before more nuanced measures of MHL including items relating to prognosis, perceived level of distress and others were developed (e.g. Jorm et al., 1997; Link et al., 1999; Jorm 2000). The following section will focus on the



expansion of the focus of MHL research to include anxiety disorders, previously largely neglected in the literature.

### *2.2.2. Broadening the Scope: Inclusion of Anxiety Literacy*

Clinical anxiety disorders have been relatively neglected in the MHL literature despite their high lifetime prevalence, chronic nature and high levels of functional impairment (Mendlowicz & Stein, 2000; Baxter, Scott, Vos & Whiteford, 2013; WHO, 2017). Clinical anxiety disorders are consistently underdiagnosed, with patients often delaying seeking help until symptoms are severe or begin producing physical symptoms (Kasper, 2006; Thompson, Issakidis & Hunt, 2008). Patients frequently fail to recognise symptoms as suggestive of mental illness, and instead often mislabel them as being due to situational stress (Thompson, Issakidis & Hunt, 2008). This under-recognition and misconceptualisation of symptoms of clinical anxiety disorders as being “stress” suggests that anxiety literacy may be lacking among the public.

In the past decade, efforts have been made to include anxiety disorders in MHL research, although many of these studies have only included one or two anxiety disorder vignettes along with other mental illnesses, which impedes direct comparisons across anxiety disorders themselves. For example, Marcus and Westra (2012) examined MHL for depression, schizophrenia and anxiety using forced-choice questions. Recognition for anxiety and schizophrenia was found to be lower than for depression. Depression and anxiety were both more often attributed to external causes (such as stress), whereas schizophrenia was more often viewed to be caused by biological factors. Personal factors (such as poor coping skills, personal weakness) were more likely to be attributed as a cause for anxiety disorders than either depression or schizophrenia. However, the authors did not specify a particular anxiety disorder, and used a one-line vignette, which was missing key features of many clinical anxiety disorders, such as duration of symptoms and level of interference in daily activities, limiting the validity of the findings (Marcus & Westra, 2012, pp.4; American Psychiatric Association, 2013). Reavley, Morgan and Jorm (2014) included social phobia and PTSD

along with depression and psychosis in a scale development paper, but did not discuss mental health literacy broken down across disorders. Similarly, Reavley and Jorm (2014) included PTSD and social phobia in a study examining the relationship between causal beliefs surrounding mental disorders and stigma but did not discuss the findings on causal beliefs themselves in isolation or detail.

More recently, MHL studies have included multiple anxiety disorders, and the initial results from this area suggest that MHL varies across anxiety disorders, and thus emphasise the need to compare MHL across anxiety disorders rather than discussing “anxiety” as a general category. Coles and Coleman (2010) evaluated MHL (recognition, causal beliefs and recognition of the need for help) relating to obsessive-compulsive disorder (OCD), generalised anxiety disorder (GAD), social phobia and panic disorder, as well as depression. They found that OCD and depression were associated with relatively high recognition rates, but that less than half of participants correctly labelled panic disorder or GAD. The study also found that mental illness was rarely chosen as a cause for GAD, social phobia and panic disorder, suggesting that people may be less likely to conceptualise these disorders as being mental illnesses (Coles & Coleman, 2010). Instead, stress was a commonly endorsed cause for GAD and panic disorder, with panic disorder also attributed to biological factors, and environmental factors and personal weakness endorsed as causes for social phobia (Coles & Coleman, 2010). Additionally, depression, panic disorder and OCD had the highest rates of recommendations for professional help, while social phobia and GAD had lower rates, with only half of participants perceiving GAD as necessitating professional help (Coles & Coleman, 2010). This is interesting, as recognition rates for panic disorder were low, but participants nonetheless felt that professional help was necessary, underscoring the need to assess multiple components of MHL. Overall, anxiety literacy was found to be lacking. Notably, the study used forced-choice measures in which participants chose a label from a selection provided; it is possible that different results may have been obtained if participants had been asked to generate their own responses; labelling accuracy may have been lower without the prompt from the list. Additionally,

the participants were currently enrolled on a university psychology course, and thus may have greater knowledge of mental illness than the general population, in which anxiety literacy may be even lower.

This is supported by findings by Coles, Schubert, Heimberg and Weiss (2014), who found that while half of a sample of US adults could correctly identify symptoms in a vignette as being depression, less than 20% could correctly identify panic disorder, social anxiety disorder or GAD. Only 37% labelled social anxiety as being a mental illness, while just under half did not perceive GAD and panic disorder as being mental illnesses. In comparison, 62% recognised depression as being a mental illness. Interestingly, three quarters of respondents indicated that they felt the symptoms across the vignettes were a cause for concern, though this was highest for depression (94%), for which levels of concern were significantly higher than GAD and SAD. Levels of concern for panic disorder, however, were not significantly lower than depression, suggesting that participants may be more likely to underestimate GAD and SAD compared to depression and panic disorder. Again, the importance of using multi-component measures of MHL is apparent; recognition of the anxiety disorders was low, as was conceptualisation of them as being mental illnesses, but level of concern was high, indicating that while participants may not possess specific anxiety-related knowledge, they are nonetheless aware of the presence of a problem that warrants their concern (Coles et al., 2014).

In a separate paper based on the same study, the authors examined recommendations for help-seeking for anxiety disorders and found that most participants recommended seeking help for anxiety disorders (Schubert, Coles, Heimberg & Weiss, 2014). However, participants were significantly more likely to recommend help-seeking for depression than for social anxiety disorder and GAD. As with level of concern, rates of recommendations for professional help for panic disorder were comparable to those for depression; again illustrating that although recognition for

panic disorder was low (Coles et al., 2014), participants are able to recognise that external help is needed (Schubert et al., 2014). However, the high rates of recommendations for professional help are slightly undercut by the fact that half of participants did not recognise the anxiety disorders as being symptomatic of mental illness; raising questions as to whether appropriate *sources* of help would be recommended. Indeed, it was found that the most common recommendation was to seek help from a primary care physician, with less than a quarter of participants recommending mental health professionals such as psychologists, psychiatrists or general counsellors (Schubert et al., 2014). Participants were significantly more likely to recommend a physician for panic disorder than for GAD, and for GAD than for social anxiety disorder. While primary care physicians are an appropriate source of help for anxiety disorders, it may be the case that because a large proportion of participants do not view anxiety disorders as mental illnesses, they do not consider mental health professionals when asked to suggest sources of help.

Following from this, Coles, Coleman and Schubert (2015) presented young adults with vignettes describing anxiety disorders (GAD, social anxiety disorder, and panic disorder) and depression, and asked them to make recommendations for help-seeking. They found that the rates of help-seeking suggestions varied between anxiety disorders; with high recommendations for seeking professional help in the case of panic disorder, and low rates of recommendations for GAD and social phobia. This suggests that many participants did not recognise the need for professional help in GAD and social phobia, despite the vignettes indicating the high levels of distress associated with the symptoms. This also contrasts with previous findings in which a majority of participants did recognise the need for professional help across a range of anxiety disorders (e.g. Schubert et al., 2014).

Knowledge of appropriate help for anxiety disorders was further explored by Schofield, Moore, Hall and Coles (2016), in a study which found that a majority (89%) of participants recommended professional help across anxiety disorders and depression, although this was lowest for social

anxiety disorder, and highest for panic disorder and depression, replicating a pattern seen in previous studies in which panic disorder seems to be taken more seriously, along with depression, than other anxiety disorders (Coles et al., 2014; Schubert et al., 2014). Across the disorders, therapy and medication were rated highly as being helpful, but inappropriate coping strategies such as avoidance were also perceived to be helpful, for panic disorder in particular (Schofield et al., 2016). More than 20% of participants attributed social anxiety disorder as being caused by personal weakness, compared to under 10% for the other vignettes. The study did not assess participants' ability to identify disorders.

While the majority of studies examining anxiety literacy have been limited in focus either in terms of the number of anxiety disorders studied, or the scope of the MHL measure used, a few authors have conducted more in-depth explorations of anxiety literacy. For example, Furnham and Lousley (2013) used a detailed measure of MHL - assessing ability to correctly label disorders, beliefs about treatment and the need for help, and the perceived adjustment of vignette characters in terms of happiness, personal relationships and success at work - across multiple anxiety disorders; OCD, post-traumatic stress disorder (PTSD), agoraphobia, specific phobias, social phobia, separation anxiety disorder, GAD and panic disorder. As in other studies, the authors found that MHL varied both depending on the disorder, and the component of MHL being assessed.

Two thirds of participants identified OCD, the highest rate of recognition, while recognition was extremely low for panic disorder and GAD, with less than 3% of participants correctly identifying these disorders. The authors speculate that this may be because OCD, along with PTSD and agoraphobia (correctly identified by 35% and 41% of participants, respectively) are more obvious and visible (Furnham & Lousley, 2013). A fifth of participants mislabelled panic disorder as being a medical illness; this tendency for people to misunderstand panic disorder as being a physical medical problem may have contributed to the high rates of suggesting seeking help from a doctor, and low rates of recommending psychological treatment for panic disorder (Furnham & Lousley,

2013). This propensity for the public to perceive panic disorder as being a medical condition has been supported by other studies, as has the tendency for participants to suggest medical rather than psychological help for panic disorder (Gallagher & Watt, 2019). Equally, however, it may also be the case that participants recognise the need for psychological help, but that they see a medical doctor as being the first port of call in accessing that help; more research is needed to examine the nuances involved in suggesting particular types of help for anxiety disorders. Additionally, just under 30% labelled it as “panic attacks”, indicating that the strict criteria used for correct labelling by the authors may belie a higher level of understanding of the problem by participants who may not possess the specific diagnostic terminology (Furnham & Lousley, 2013).

Agoraphobia and PTSD had the highest perceived need for help, followed by OCD, panic, and separation anxiety, with GAD and specific phobia having the lowest perceived need for help; significantly lower than all other disorders. The authors note this suggests that GAD and specific phobia may thus be conceptualised as par for the course in everyday life, rather than as mental disorders that warrant professional treatment; this is supported by the finding that just under a fifth of participants labelled the GAD character using non-clinical terms such as “worrier” compared to PTSD and agoraphobia which “...*may be seen as more unusual and as having a greater impact on people, therefore explaining why they received higher help ratings*” (Furnham & Lousley, 2013, pp. 529). The symptoms of disorders such as GAD, while more severe and distinct from normal worry, may be more familiar to participants due to the fact that worry is experienced by everyone at some point; it may be that they fail to recognise the clinical significance, as opposed to disorders with more obvious impacts, such as PTSD or agoraphobia.

More recent studies have supported the general findings that mental health literacy across anxiety disorders remains relatively low. Hadjimina and Furnham (2017) found anxiety literacy to be low across multiple disorders; they also found that younger adults had higher levels than older participants. While the study did not examine differences between disorders in detail, as the focus

was on demographic differences in MHL, correct labelling was again found to be highest for PTSD and OCD, and lower for GAD, panic disorder, agoraphobia and social anxiety disorder, in line with previous research (Hadjimina & Furnham, 2017; Furnham & Lousley, 2013). In contrast, Gallagher and Watt (2019) found that a majority of participants could identify schizophrenia, depression, substance use disorder, GAD and OCD; however, the authors did not specify what the criteria were for “correct” identification.

In a study examining MHL in the form of participant’s perceptions of symptom severity for vignettes describing GAD, social anxiety disorder and major depression, Paulus, Wadsworth and Hayes-Skelton (2015) found that participants significantly underestimated the distress of GAD at all severity levels, while overestimating distress severity for depression, compared to experts’ ratings. As the authors note, this is especially important given the fact that GAD sufferers usually do not seek help until the problem is severe or begins to produce physical symptoms, often because they do not recognise initial symptoms as indicative of a mental illness (Thompson, Issakidis & Hunt, 2008; Paulus et al., 2015). Social anxiety disorder was under-rated in severity in the subclinical and moderate cases, suggesting that people can only correctly register the distress of SAD once it becomes severe. As well as illustrating the differences in perceptions of severity across anxiety disorders, this study highlights the need to include more nuanced measures of MHL, such as perceptions of severity, as they provide a more in-depth understanding of peoples’ conceptualisations of mental illness.

To summarise, anxiety disorders have been historically neglected in the MHL literature, only becoming a focus in recent years. Anxiety literacy appears to be poor compared to other disorders (Marcus & Westra, 2012) although this varies by anxiety disorder and component of MHL being measured. MHL seems to be lowest for GAD and social anxiety disorder, across components of MHL including recognition, knowledge of appropriate help and perceived severity of symptoms, than for more obviously “abnormal” disorders such as OCD and PTSD (Coles & Coleman, 2012;

Furnham & Lousley, 2013; Coles et al., 2014; Paulus et al., 2015). It may be the case that disorders such as GAD and social anxiety disorder, due to the nature of their symptoms being similar to common emotional experiences such as stress or shyness, are more likely to be normalised by the public; this would be in line with studies which have shown anxiety disorders, particularly GAD, to have a long delay between symptom onset and help-seeking, often due to patients not realising that they are experiencing symptoms of a psychological disorder (Kasper, 2006; Thompson et al., 2008).

While it is clear that anxiety literacy must be studied across anxiety disorders, it is also clear that when examining MHL for any given anxiety disorder, multiple components of MHL must be assessed and considered together in order to obtain a detailed understanding of MHL for each disorder. For example, correct identification of panic disorder is consistently low (Furnham & Lousley, 2013; Coles et al., 2014) and often mislabelled as a physical illness (Furnham & Lousley, 2013; Gallagher & Watt, 2019), while in contrast, level of concern and rates of recommendations for seeking professional help are high (Coles et al., 2014; Schubert et al., 2014). A fuller picture of MHL for panic disorder then, suggests that the public seem to misperceive it as being a medical illness, which in itself warrants concern and professional help, indeed, the help-giving suggestions often focus on medical, rather than psychological help (Gallagher & Watt, 2019). This illustrates the need to consider the MHL of each anxiety disorder separately, and across multiple components of MHL, in order to fully understand the complex factors involved. This consideration of the different components of MHL in relation to each other is lacking in the literature to date. Additionally, beliefs about causality have been largely neglected in this area.

Though anxiety disorders have increasingly been included in the MHL literature in the past ten years, we still do not yet have a clear picture of the general public's anxiety literacy; methodological differences across studies and the dearth of studies including multiple anxiety disorders, using detailed, multi-component measures of MHL makes definitively assessing anxiety



literacy difficult; further study in this area is vital, given the prevalence, impact and under-recognition of clinical anxiety disorders worldwide (Mendlowicz & Stein, 2000; Thompson et al., 2008, Baxter, Scott, Vos & Whiteford, 2013; WHO, 2017)

### *2.2.3. Adolescent Mental Health Literacy: Overview*

The majority of research into mental health literacy has been conducted in adults, despite the fact that adolescence is a peak time for the emergence of mental illness, particularly anxiety disorders (Kessler et al., 2005; Craske & Stein, 2016). Anxiety disorders frequently become chronic conditions which persist throughout adulthood, highlighting the need for early intervention (Yonkers, Bruce, Dyke & Keller, 2003; Baxter, Scott, Vos & Whiteford, 2013).

Additionally, adolescent mental health literacy is of particular interest due to the unique importance of peer relationships during adolescence; this emphasis on peer relationships is of twofold importance when considered in the context of mental health literacy. First, peers are consistently chosen among the preferred source of help for adolescents suffering from mental illness (Sheffield, Fiorenza & Sofronoff, 2004). Second, it has been found that adolescents frequently demonstrate stigmatising responses and rejection toward peers with mental health problems (O'Driscoll, Heary, Hennessy & McKeague, 2012; Heary, Hennessy, Swords & Corrigan, 2017). It is therefore vital to assess the level of knowledge and understanding of mental illnesses among adolescents, in order to ascertain the kind of responses they might give to a friend in need, and potentially develop interventions to improve knowledge and understanding where necessary, with a view to reducing stigmatising responses which may be informed by misconceptions about mental illness. In spite of this, adolescents have been relatively neglected in the MHL literature, and the findings from studies of adult MHL cannot be assumed to be generalisable to adolescents.

The definition of adolescence has differed over time, and there is still disagreement over the most appropriate and useful age range for this period of development, with the World Health Organisation categorising adolescence as being between 10-19 years (World Health Organisation, 2021), and UNICEF also using this definition (UNICEF, 2018), while the Lancet Commission on Adolescent Health and Wellbeing (Patton et al., 2016) categorises adolescence as being between 10-24 years. It has been argued that the expanded definition of adolescence (10-24 years) may

more accurately capture the developmental period of adolescence, by spanning both the biological processes of puberty, beginning at around 10 years of age, as well as the social role transitions (marriage, economic independence, parenting) that have traditionally marked the end of adolescence, and which are consistently occurring at later ages worldwide (Sawyer, Azzopardi, Wickremarathne & Patton, 2018). In this review I will thus use the 10-24 years age category for adolescence as a guide for the inclusion of studies on adolescent mental health literacy.

The majority of work that has been conducted among children and adolescents has centred primarily on depression. For example, Burns and Rapee (2006) assessed depression literacy in 16 year olds and found that the ability to correctly recognise and label depression based on symptoms was mixed, however participants were able to differentiate between depressed and non-depressed characters in terms of how long they thought it would take them to recover, and how severe they perceived their symptoms to be. This again indicates the importance of measuring various aspects of mental health literacy, such as perceived symptom severity and beliefs about prognosis, in order to capture knowledge that may go untapped by simply asking participants to name a disorder (Burns & Rapee, 2006). There was a pronounced difference in ability to label depression between the two depressed vignettes included in the study; depression with suicidal thoughts was correctly recognised by two thirds of participants, versus one third for depression without suicidal thoughts. Suicidal thoughts were also the symptoms most likely to be noted by participants as alerting them to the character's distress – suggesting that where such obvious and visible symptoms are not present, the ability to recognise depression may be restricted (Burns & Rapee, 2006).

More recently, it was found that recognition of depression among Irish adolescents was low (Byrne, Swords, & Nixon, 2015). Half of respondents failed to label one character as depressed despite explicit reference to suicidal ideation, and two thirds failed to recognise depression in a second vignette (Byrne et al., 2015). Most participants indicated they felt concern for the depressed characters at higher levels than the non-clinical vignettes. A majority of participants

(over 80%) indicated that they felt the two depressed characters needed help. This suggests that even if adolescents cannot name the problem, they can still recognise it as a cause for concern in need of external help. This is supported by the fact that two thirds of study participants recommended a mental health professional as a source of help for the depressed vignette characters; while over half recommended friends and family (Byrne et al., 2015). A majority indicated that they would help the depressed peers access help. When asked how they would help, responses were categorised as *“cheering, comforting and reassuring, perspective-taking, advice from similar experience, distraction, physical activities, engagement with adults, and multiple types of help”* (Byrne et al., 2015, pp.486). No participants mentioned assessing risk of suicide, despite the presence of suicidal symptoms in one vignette; this is concerning (Byrne et al., 2015).

Another recent study found that older children’s conceptualisations of depression were lacking; among children aged between 8-12 years, only a fifth of participants correctly recognised depression. Most participants could recognise that depression was a problem, but only half recognised that it was a mental health issue, with a section of participants confusing depression with other issues, such as autism or anger problems (Georgakakou-Koutsonikou, Taylor & Williams, 2018). This is in contrast to studies in adolescents which have shown that even if they cannot label the disorder, they may still recognise it as a general mental health problem, as demonstrated by suggesting seeking help from mental health professionals (e.g. Byrne et al., 2015). With regard to potential causes, children favoured external (environmental and interpersonal) causes rather than an underlying biological issue (Georgakakou-Koutsonikou et al., 2018). Depression was perceived by participants as curable with treatment after only 1-2 months, suggesting that they may considerably underestimate the seriousness of the condition (Georgakakou-Koutsonikou et al., 2018). Older children (11-12) had more advanced concepts of depression than younger ones (Georgakakou-Koutsonikou et al., 2018).

The little research that has been conducted in the area of adolescent MHL, and MHL research in general, has primarily been carried out among western populations. Recent studies have aimed to address this gap, and suggest that adolescent MHL may be even lower among non-western populations. Aluh, Anyachebelu, Anosiki and Anizoba (2019) found that only 5% of Nigerian adolescents surveyed could correctly recognise depression from a vignette, with under 2% recommending help from a mental health professional. The most common sources of help suggested were family and friends (Aluh et al., 2019). Levels of MHL in this study were far lower than those found in other research; this illustrates the importance of conducting MHL among a wide range of populations for a non-skewed picture of the state of MHL globally.

There has been limited inclusion of other mental illnesses in the adolescent MHL literature. Wright et al (2005) examined recognition and knowledge of treatment for psychosis and depression among adolescents and young adults and found mental health literacy overall to be low. Just under half of respondents could identify depression, while only a quarter could recognise psychosis (Wright et al., 2005). Only a third of participants had a correct understanding of the prognosis for both conditions. In an open-ended question on how best the peer could be helped, family and friends were among the most common sources of help suggested, and this was more frequent among adolescents (aged 12-17 years) than young adults, suggesting that adolescents may be more likely to favour more informal help. When asked to rate the helpfulness or harmfulness of various treatments and sources of help, however, over 70% rated mental health professionals as being helpful for both psychosis and depression, suggesting that adolescents and young people may choose a more appropriate source of help when given the option, as opposed to when asked an open-question (Wright et al., 2005). However, it may be the case that the responses given to open-ended questions are more representative of adolescents' likely response to a peer with mental illness in a real-life setting; adolescents are seen to consistently favour informal support for themselves when experiencing mental illness (Clark et al., 2018). Endorsement of mental health professionals was however, significantly lower for depression than psychosis, as was endorsement

of therapy, although most participants rated therapy as being helpful overall. However, the majority of participants viewed psychiatric medication negatively (Wright et al., 2005). Again, this indicates a conflict seen in other studies; the tendency for people to endorse mental health professionals but reject one of their main treatments (Angermeyer & Matschinger, 1996a; Jorm et al 1997; Jorm, 2000). The conflicting finding that twice as many participants could correctly identify depression compared to psychosis, but that participants were more likely to endorse professional treatment for psychosis than depression again underscores the need to examine multiple components of MHL across multiple disorders; participants did not have the specific terminology for psychosis but nonetheless recommended professional help at higher rates than for depression (Wright et al., 2005).

Wright et al.'s (2005) finding that informal support from friends and family is favoured by adolescents when asked an open question on how best to help a peer with a mental illness has been supported by subsequent studies. Kelly, Jorm and Rodgers (2006) found that over half of participants gave increased social support as the only help-giving action they would undertake for a hypothetical peer with either conduct disorder or major depression. Less than a quarter suggested involving an adult, although this was higher for conduct disorder than depression (Kelly et al., 2006).

A similar study by Kelly and Jorm (2007) also found that the majority of suggestions for help revolved around informal social support, such as listening and distraction. Taken together, these findings suggest that overall, when not explicitly prompted by a list of potential treatments, adolescents may not express help-giving suggestions which would lead to their peer accessing effective or appropriate help (Wright et al., 2005; Kelly et al., 2006, Kelly & Jorm, 2007). It is worth noting that the preference for informal help is present across these three studies despite using different forms of the question, i.e., asking how the person might best be helped, who could help, versus what the participant themselves would do to help the person (Wright et al., 2005; Kelly et

al., 2006, Kelly & Jorm, 2007). These findings are also in line with research which has shown that adolescents prefer informal help such as peer support for *themselves* (Gulliver, Griffiths & Christensen, 2010).

In contrast, Swords, Hennessy and Heary (2011) found that adolescents aged 12-16 years recognised the need for help for hypothetical peers displaying symptoms of ADHD and depression, and when asked who they thought could help with the problem, suggested family, teachers, and mental health professionals at relatively similar frequencies, indicating an awareness of a wide range of awareness of both informal and formal supports, although this varied by disorder and age of participant. Younger participants suggested fewer different sources of help for the depressed character than their older counterparts. Significantly more sources of help were suggested overall for ADHD than depression (Swords et al., 2011).

While the body of literature into adolescent MHL is extremely limited, the initial indications from the studies that have been conducted indicate that overall, adolescent mental health literacy is mixed to poor, and worse than that found in studies with adult samples, although this appears to depend on which component of MHL is being measured (Wright et al., 2005; Burns & Rapee, 2006; Byrne et al., 2015). Numerous studies have indicated only a minority of older children and adolescents are able to give specific labels (Wright et al., 2005; Byrne et al., 2015; Georgakakou-Koutsonikou et al., 2018) and that even the ability to recognise the presence of a general mental health problem is relatively low in pre-adolescent children (Georgakakou-Koutsonikou et al., 2018).

The proportion of adolescents recognising the need for help for mental illness is more encouraging (Swords, et al., 2011; Byrne et al., 2015) although knowledge of and suggestions for appropriate help seem to be poor, with a general preference for informal help (Kelly et al., 2006; Kelly & Jorm, 2007), although other studies have found higher rates of formal help suggestions, yet the overall frequency remain low (Swords et al., 2011). Responses relating to knowledge of appropriate help

also appear to depend on the format of the measure; when asked to rate sources of help, mental health professionals are rated highly (Wright et al., 2005).

Adolescent MHL tentatively appears to vary by disorder (Wright et al., 2005; Kelly et al., 2006; Swords et al., 2011), although these differences are inconsistent and appear to vary depending on which component of MHL is being measured. Additionally, the scope of adolescent MHL thus far has largely been restricted to depression, anxiety and psychosis. Due to the lack of research in this area explicitly comparing MHL across multiple disorders in adolescents, no definitive conclusions can yet be drawn as to the differences in MHL across disorders in general in this age group.

Additionally, even within single disorders, the presence or absence of certain symptoms such as suicidality appears to have an impact on MHL (Burns & Rapee, 2006; Byrne et al., 2015). This may reflect a similar phenomenon to that seen in the adult literature whereby MHL responses are different when visible or immediately alarming symptoms are present (e.g. Furnham et al., 2016).

#### *2.2.4. Adolescent Anxiety Literacy*

Even more so than with adult samples, anxiety literacy has been neglected in the MHL literature, with only a handful of studies to date examining adolescents' understanding of clinical anxiety disorders, and none focusing exclusively on anxiety literacy in detail.

Social anxiety disorder, or social phobia is the anxiety disorder which has been most frequently incorporated into adolescent MHL research to date. Reavley and Jorm (2011a) found that less than 10% of participants could correctly label social phobia; in contrast a third could correctly recognise schizophrenia, and three quarters labelled depression correctly. However, while the sample included adolescents over the age of 15, it also included adults. Results were not broken down by age group and the authors note that younger participants were underrepresented, making specific interpretation about adolescent understanding impossible (Reavley & Jorm, 2011a). This study also included post-traumatic stress disorder (PTSD) – which was previously categorised as an anxiety disorder (APA, 1994) – and found that a third of participants could correctly identify PTSD (Reavley



& Jorm, 2011a). A separate study by Reavley and Jorm (2011b) examined MHL in adolescents and young people aged 12-25 specifically, and included social phobia and PTSD; again, as in the adult sample, around a third of participants could identify PTSD, however only three percent of participants could correctly identify social phobia. This suggests that MHL may be particularly low for social phobia in adolescents and young people. Similar results regarding recognition of social phobia were found in a study of 12-25 year olds by Wright, Jorm and Mackinnon (2011). Help-seeking intentions were also lowest for social phobia, although still high at 73% (Reavley & Jorm, 2011b). Social phobia was also included alongside depression, in a study by Mason, Hart, Rossetto and Jorm (2015) which focused on quality of help-giving suggestions (i.e. mental health first aid). Overall quality of suggestions was low, particularly with regard to rates of involving an adult and looking for warning signs. Overall recognition of disorder was lower for social phobia than depression, as were rates of responses suggesting adult involvement, which the authors suggest implies that social phobia is not being perceived as a legitimate disorder warranting adult help (Mason et al., 2015, pp. 36).

Yap, Reavley and Jorm (2012) included social phobia and PTSD in a study of adolescents' mental health first aid intentions and beliefs, along with depression, depression with alcohol misuse, depression with suicidal thoughts, and psychosis. With regard to mental health first aid intentions, over half of participants suggested listening or talking to the person in the vignette, with 44% responding that they would suggest or facilitate professional help-seeking; that is, a majority of participants did not indicate that they would suggest professional help-seeking. When asked to rate the helpfulness of a list of help-giving actions (i.e., mental health first aid beliefs), the most frequently endorsed actions were listening to the person, encouraging physical activity, rallying friends around the person, and suggesting professional help. Suggesting professional help-seeking, and making a GP appointment for the person were endorsed at lower rates for the social phobia vignette, while endorsement of professional help-seeking was higher for PTSD (Yap et al., 2012).

Adolescents' and young people's mental health first aid intentions and beliefs have in turn been found to predict the actions that adolescents actually took to assist a close other experiencing mental health problems. Yap and Jorm (2012) found, in a study that included social phobia among other disorders, that the quality of mental health first aid intentions toward a hypothetical peer predicted the quality of actual actions taken to support a close other in a follow-up study, although this was not the case for encouraging professional help. Belief in the helpfulness of an action also increased the odds that the young person actually took that action to help a close other, but again, not for suggesting professional help (Yap & Jorm, 2012). These results support the use of intentions and belief measures in mental health first aid research, which are often easier to measure than actual help-giving actions. The authors note that the quality of the mental health first aid responses in the study, both help-giving intentions and beliefs in the initial interview, and actual help-giving actions taken, were poor overall (Yap and Jorm, 2012).

This is in line with another study examining the first aid actions taken by young people to help a close other with a mental health problem; Yap, Wright and Jorm (2011) found that when adolescents were asked to spontaneously report actions they had taken to help, informal help-giving actions such as talking and listening to the person, and general social support were the most frequent responses, with only 15% of participants spontaneously reporting that they had encouraged or facilitated professional help-seeking (Yap et al., 2011). However, 58% of participants reported suggesting the person seek professional help when prompted.

Coles et al (2016) found that although the majority of participants failed to recognise both depression and social anxiety disorder, adolescents were significantly more likely to correctly identify and recommend help for depression over social anxiety disorder. Friends, family and seeing a counsellor were the most commonly recommended sources of help, with less than five percent recommending seeing a psychologist, psychiatrist or doctor for either disorder.

Significance tests were not reported comparing suggested sources of help for depression versus

social anxiety disorder, but in general, participants recommended friends at higher rates for social anxiety (32%) than depression (24%), and seeing a counsellor at higher rates for depression (17%) than social anxiety disorder (9%) (Coles et al., 2016). While seeing a counsellor was among the more frequent suggestions, the proportion of participants giving this response was still low overall. The level of concern expressed by participants was significantly higher for depression than for either social anxiety or stress, but it was also significantly higher for social anxiety disorder than for stress, suggesting that participants were still perceiving a distinction in severity between social anxiety disorder and non-clinical stress. Participants perceived depression and social anxiety disorder as having a longer course than situational stress, but there was no significant difference between the two clinical vignettes themselves (Coles et al., 2016). Again, this illustrates the importance of assessing multiple components of MHL as there may be differences between disorders on some items (e.g. recognition) but not others (e.g. prognosis).

A study of MHL among Sri Lankan younger adolescents (aged 13-16 years) included social phobia along with depression, psychosis and diabetes as a control scenario (Attygalle, Perera & Jayamanne, 2017). They found that just over 60% of participants recognised social anxiety as being a mental health problem, compared to 70% for psychosis and over 80% for depression. However, the study did not assess ability to correctly label disorders; this is likely lower than recognition of the presence of a general mental health problem, as per other studies (e.g. Georgakakou-Koutsonikou et al., 2018). Only 48% of participants recommended seeing a doctor for the social phobia vignette, the same proportion as for depression and psychosis, in contrast to 70% saying a doctor would be helpful for diabetes, a physical illness, however no other sources of help were assessed (Attygalle et al., 2017). A third of participants indicated that a local religious ritual would be beneficial for psychosis; reflective of the prevalence and effect of cultural beliefs about spiritual causes for mental illness in Sri Lanka (Attygalle et al., 2017). The study did not ask participants to rate the helpfulness of mental health professionals or psychological treatment.

To summarise, the literature on adolescent anxiety literacy thus far suggests that adolescent understanding of social anxiety disorder may be lower than that of depression, in terms of recognition, perceived severity and knowledge of appropriate help. Other clinical anxiety disorders, such as GAD, have been almost entirely neglected in the research literature in adolescent samples. A recent study into determinants of help-seeking behaviour for GAD in adolescents included a measure of MHL, and found that adolescents had limited anxiety literacy on a measure of MHL which involved responding to true/false questions assessing knowledge of GAD on a number of factors, including symptoms and treatment (Calear, Batterham, Torok & McCallum, 2021). However, the focus of the study was not on anxiety literacy, and as such no detailed discussion of GAD literacy was provided (Calear et al., 2021). Additionally, the study examined responses and knowledge in relation to the GAD label, rather than to a vignette describing symptoms of GAD in a hypothetical peer; thus, it may not be an accurate representation of how adolescents conceptualise and respond to symptoms of GAD in reality. There are as yet no studies examining MHL relating to other anxiety disorders in adolescents, either in isolation or in comparison with other disorders. A qualitative study which did not focus on MHL but looked at barriers to help-seeking for clinical anxiety disorders among adolescent boys found that limited knowledge of clinical anxiety emerged as a major barrier, with most boys feeling that most of their peers, and the adults around them would lack sufficient knowledge, and expressed awareness of a common perception that clinical anxiety disorders are not legitimate illnesses (Clark, Hudson, Dunstan & Clark, 2018). However, the study did not measure mental health knowledge directly. Additionally, most participants expressed a preference for informal help and self-reliance when discussing what they would do if they experienced clinical anxiety, suggesting thinking more positively, relaxing, and participating in fun activities as ways of dealing with symptoms, rather than seeking out appropriate professional help, in line with findings on other disorders (Clark et al., 2018; Gulliver et al., 2010).

All in all, in-depth research into anxiety literacy is generally lacking in children and adolescents, and MHL research in general has mostly been undertaken with adult populations. Indeed, a recent review evaluating mental health literacy measurement tools notes that out of 17 studies, only four specifically targeted young people, highlighting the fact that younger people have thus far been an afterthought in this area (Wei et al., 2016). Clearly, more research is needed in both adolescent MHL in general, and adolescent anxiety literacy in particular.

### **2.3. Gender and Mental Health Literacy**

Gender has emerged as a factor of interest in the mental health literacy research. While many early studies did not include gender in the context of MHL, both participant gender and to a lesser extent, vignette gender, are now often included as a routine part of MHL research.

#### *2.3.1. Participant Gender and Mental Health Literacy*

As with mental health literacy research in general, the bulk of studies examining the influence of participant gender on MHL have been conducted in adult samples. They show a consistent trend toward higher levels of MHL among female participants, however, this has varied across studies, by disorder, and across components of MHL.

Women have been found to have significantly higher mental health literacy than men (in the form of recognition of disorders and treatment beliefs) for depression with suicidal thoughts, schizophrenia and PTSD, but not for social phobia or depression without suicidal thoughts (Reavley, Morgan & Jorm, 2014). Another study however, found female participants to have significantly higher levels of recognition for social phobia and depression, as well as addiction, anorexia, bulimia, OCD, ADHD, and bipolar disorder, but not schizophrenia (Furham, Annis & Cleridou, 2014). In contrast others have found that female participants had higher levels of recognition for substance use disorder, but not for depression, GAD, panic disorder, OCD or schizophrenia, and no gender differences in perceived cause of disorders, although this study was not gender-balanced, with only 20% of the sample being male (Gallagher & Watt, 2019).

The apparent trend toward higher MHL among female participants appears to extend beyond simple recognition of disorders. Furnham et al (2014) also found that females had perceived significantly more distress, and rated disorders as being more difficult to treat than males, across vignettes, suggesting that females may be more likely to grasp the severity of clinical mental illness (Furham et al., 2014). Additionally, female participants had greater levels of sympathy than males, and were significantly more likely to recommend seeking help for bulimia, depression, ADHD,

anorexia and social phobia. Males were significantly more likely to recommend coping alone, while females were significantly more likely to recommend parents, other family members, a GP, or mental health professionals than males (Furnham et al., 2014).

The tendency toward better quality help-giving responses among women has been found consistently; a study into mental health first aid responses found that appropriate help-giving responses for depression and schizophrenia, such as encouraging professional help, seeing a doctor or GP, and offering to accompany the person to professional help were more likely among women (Jorm et al., 2005). Other studies have found gender differences in help-giving for some disorders but not others, with males significantly more likely to prefer dealing with the problem alone for major depression and substance use, but not for OCD, panic disorder, GAD or schizophrenia (Gallagher & Watt, 2019). More research is needed in order to ascertain whether these variations in gender differences in MHL across disorders are replicated across studies, and if so, examine why that may be the case.

Studies examining the role of gender on MHL relating to anxiety disorders specifically have been lacking in the literature until relatively recently, and the few studies which have been conducted continue to support the findings of higher MHL among female participants seen in previous MHL research. Furnham and Lousley (2013) found that female participants were significantly more likely to correctly identify specific phobia, PTSD and OCD than males, and had higher (but non-significant) rates of recognition for GAD, agoraphobia, panic disorder, social phobia and separation anxiety disorder. Recognition for these disorders with no significant gender difference was extremely low overall (Furnham & Lousley, 2013). Female participants were also significantly more likely than males to perceive the need for help for PTSD, separation anxiety disorder and OCD, with no gender differences for the other disorders included. Additionally, males perceived the panic disorder, separation anxiety disorder, specific phobia, OCD and PTSD vignette characters as being

significantly more well-adjusted than females, suggesting that they may be underestimating the illness burden of these disorders (Furnham & Lousley, 2013).

However, Paulus, Wadsworth and Hayes-Skelton (2015) found that female participants were more likely to under-rate the severity of GAD and social anxiety disorder more than male participants, in contrast to previous findings which showed that women tend to have higher levels of MHL (Furnham & Lousley, 2013; Reavley, Morgan & Jorm, 2014; Gallagher & Watt, 2019). Women have consistently been found to have higher rates of anxiety disorders than men (McLean, Asnaani, Litz & Hoffman, 2011; Asher, Asnaani & Aderka, 2017), and it may be the case that they are underestimating the severity of GAD and social anxiety disorder due to normalising symptoms which they may see as being common. Indeed, Furnham and Lousley (2013) found that women were significantly more likely than men to recommend help for a variety of anxiety disorders – except for GAD and social anxiety disorder. Anxiety disorders in particular are often normalised by patients or misinterpreted as being symptomatic of every day stresses (Thompson, Issakidis & Hunt, 2008).

Gender differences in MHL have also been shown in younger adult and adolescent samples. Cotton, Wright, Harris, Jorm and McGorry (2006) found that male participants had significantly lower levels of recognition of depression than females, and were more likely to attribute symptoms of depression to environmental stressors. There were no significant overall gender differences in recognition of psychosis; the recognition of psychosis was lower than depression in general among both males and females. However, in older participants (18-25), female participants had significantly higher levels of recognition than males, suggesting that females' knowledge of psychosis may improve with older age, in contrast with males', suggesting a potential interaction between gender and age (Cotton et al., 2006). There were significant overall gender differences in recommended sources of help for psychosis; male participants were significantly less likely to recommend a doctor, psychologist or counsellor than females. (Cotton et al., 2006). For



depression, there were no significant gender differences in proposed sources of help (Cotton et al., 2006).

Burns and Rapee (2006) found that female adolescents had higher MHL for depression, across labelling, levels of concern, perceived recovery time and ability to recognise specific depression symptoms. Similar results have been found elsewhere; female participants demonstrated higher recognition of depression and more appropriate help-giving responses than males in a Nigerian adolescent sample (Aluh, Anyachebelu, Anosiki & Anizoba, 2019). Byrne, Swords and Nixon (2015) found that female participants showed significantly higher levels of concern for a depressed peer, as well as a greater perceived need for help, and more sophisticated help-giving suggestions, with girls twice as likely as boys to recommend involving an adult, although there were no gender differences in correct labelling of depression (Byrne et al., 2015).

Gender differences in the quality of help-giving responses for peers with mental illness are particularly consistent in the literature, with males repeatedly found to have less appropriate help-giving responses (Kelly, Jorm & Rodgers, 2006; Kelly & Jorm, 2007). Male adolescents were also found to have lower confidence in offering support than females (Kelly & Jorm, 2007).

Studies examining the role of gender in anxiety literacy in adolescent samples are largely missing from the literature, and thus far have only included social phobia. Mason, Hart, Rossetto and Jorm (2015) included social phobia in a study of adolescents' mental health first aid responses, and found that female participants had significantly better help-giving intentions than males for both social phobia and depression with suicidal thoughts. Coles et al (2016) once again found that female participants had significantly higher overall levels of MHL than male participants for both depression and social phobia. The authors also examined the effect of gender on individual components of MHL and found a significant effect of gender on recognition for depression, with females showing significantly higher levels of recognition, but not for social phobia, which had significantly lower recognition rates than depression among males and females alike (Coles et al.,

2016). Females were found to perceive both depression and social phobia as being more chronic than males, and were also significantly more likely to recommend help-seeking for both vignettes (Coles et al., 2016).

All in all, the research to date supports the idea that gender is an important factor in mental health literacy, with the majority of studies showing that females tend to have better MHL than males overall, although inconsistent findings across studies emphasise the need for further research before any specific hypotheses can be drawn with regard to the impact of gender on specific components of MHL, or for specific mental illnesses (Jorm et al., 2005; Burns & Rapee, 2006; Furnham & Lousley, 2013; Reavley et al., 2014; Byrne et al., 2015; Aluh et al., 2019). In particular, there is a dearth of research examining the role of participant gender in anxiety literacy, this lack of research is especially marked among adolescent samples.

Various hypotheses have been put forward to explain the apparent gender discrepancy in MHL, from suggesting that differences in prevalence of mental disorders according to gender may play a role, to gender differences in empathy (e.g. Furnham et al., 2014; Hadjimina & Furnham, 2017). However, the majority of the studies discussed above did not discuss any potential underlying explanation for the gender differences, and none rigorously tested a hypothesis based on a proposed underlying explanation. Future research exploring the possible mediating factors between gender and MHL are needed to fully understand the impact of gender in this context.

### *2.3.2. Vignette Gender and Mental Health Literacy*

The impact that the gender of the person displaying symptoms may have on MHL responses is relatively understudied. The role that ingrained gender stereotypes may play on how people perceive and interpret symptoms of mental illness is likely to be complex and involve interaction with many other factors, with participants' own gender being one.

The results outlined in the existing research into the effect of vignette gender are mixed. Furnham and Lousley (2013) found no significant effect of vignette gender on MHL responses relating to a

range of anxiety disorders. However, Paulus et al (2015) found that both subclinical and severe GAD and depression were rated as being more severe when the vignette character was a man, suggesting that symptoms of certain mental illness may be taken more seriously when the sufferer is male. This is supported by studies which have found that correct recognition of depression was significantly higher for male vignettes than female (Cotton et al., 2006). Correct recognition of psychosis, however, was not significantly associated with vignette gender (Cotton et al., 2006).

Coles et al (2016) also found significantly higher rates of recognition for depression in male vignettes than female vignettes, but found no effect of vignette character on recognition of social phobia; however, only 1% of participants correctly labelled the social phobia vignette overall. In contrast, there was no significant effect of vignette gender on perceived need for help for depression, but there was a significant gender effect for perceived need for help for social phobia, with participants more likely to recommend help-seeking for male characters with social phobia than female characters, suggesting that participants may view some symptoms as less serious when the person displaying them is a woman (Coles et al., 2016). Despite the lack of a significant effect of vignette gender for depression, there was an effect of vignette gender on the quality of help-giving suggestions for depression; recommendations to see a doctor were significantly higher for the female versus male depression vignette, (Coles et al., 2016). This may be due to gendered expectations around asking for external help; in another study, self-care was more likely to be recommended for vignettes depicting males with mental illness, which the authors note is consistent with cultural stereotypes of ideal males being stoic, strong, and self-reliant (Pattyn, Verhaeghe & Bracke, 2015).

This highlights the need for caution when interpreting effects of vignette gender; different gendered stereotypes may be at play depending on disorder and component of MHL being measured; for example, symptoms may be more likely to be perceived as clinical depression in males than females, but somewhat paradoxically, people may be more likely to favour self-help for

males due in part to gendered expectations around asking for help (Cotton et al., 2006, Paulus et al., 2015, Pattyn et al., 2015).

Research has also shown interactions between vignette gender and participant gender, although these vary significantly across studies, disorder and measure of MHL used, making interpretation difficult (Swami, 2012, Furnham et al., 2014). The research into effect of vignette gender thus far has shown that symptoms of mental illness may be perceived differently depending on the gender of the person depicted as experiencing them.

Far more research is necessary to obtain a clear and consistent picture of the effect of vignette gender on how people understand and interpret symptoms of mental illness, and it is likely that this picture will differ across disorders and components of MHL.

## 2.4. Critical Considerations and Conclusions

The existing MHL literature in general, while constantly improving, is inconsistent in terms of conceptualisation and measures of MHL used. While Jorm and others have laid out comprehensive, multi-component definitions of MHL (Jorm et al., 1997; Jorm, 2012) the majority of studies do not stick rigidly to this guide, and instead measure only some of these components (e.g. Samouilhan & Seabi, 2010; Coles et al., 2015; Schofield et al., 2016) and these vary across studies, which makes direct meaningful comparison of results difficult. Clearly, researchers in future should attempt to standardise their conceptualisation of MHL, and measure multiple components of MHL, to produce a more coherent understanding of MHL across the literature base.

The importance of assessing the multiple components of MHL together is demonstrated by findings which show disparate results across these components; for example, low recognition but high levels of concern, which show that even where explicit mental health knowledge is low, people can nonetheless recognise the presence of a problem that warrants concern and help (e.g. Byrne et al., 2015). Similarly, it is necessary to use a comprehensive model of MHL in order to get a better understanding of more complex cases, such as panic disorder, for which correct identification is low, recognition of the need for help is high, and people frequently misperceive it as being a physical illness (Furnham & Lousley, 2013). This suggests that while people do see symptoms of panic disorder as necessitating help, this may not be due to high MHL, but rather a misconceptualisation of those symptoms as being due to an underlying medical problem.

Omission of individual components of MHL then, result in an incomplete picture of MHL, and fail to capture the nuances of how people understand mental illnesses. The form of the questions used for each of the components being measured must also be taken into account; as is illustrated by the differences in responses on public knowledge of appropriate help for mental illness depending on use of open-or forced choice questions (Wright et al., 2005; Kelly et al., 2006, Kelly & Jorm, 2007).

In addition to the general methodological issues across the MHL literature base, there are clearly substantive gaps in the focus of the research to date. Anxiety literacy remains relatively understudied, and generally lacking in younger populations, despite this being a crucial time for the initial emergence of anxiety disorders (Kessler et al., 2005; Craske & Stein, 2016). Anxiety disorders may be particularly interesting in the area of MHL due to the common colloquial use of words such as “anxious” and “anxiety” to describe everyday, non-clinical feelings of worry, which may influence the public’s understanding of the term, as well as the tendency to normalise clinically significant anxiety symptoms as simply being everyday stress (Thompson et al., 2008). Research in adults thus far does seem to support the idea that the general public tend not to recognise less visible anxiety disorders, such as GAD or social anxiety disorder, as being mental illnesses, or requiring professional help (Coles & Coleman, 2010; Coles et al., 2015), suggesting that the MHL of the public may be particularly vulnerable in the context of anxiety disorders, although studies are severely lacking in this area in adolescents to date.

Adolescents are a uniquely interesting group in the context of MHL, not only due to the emergence of mental illness at this stage, but because of the particular importance of peer support in adolescent lives - particularly when experiencing mental health problems – and the potential for stigmatising responses by peers (Sheffield et al., 2004; O’Driscoll et al., 2012, Heary et al., 2017). Thus, obtaining a detailed picture of how adolescents understand and respond to mental illness in their peers is vital to inform any future intervention efforts. However, the literature on adolescent MHL remains limited, and, in the case of adolescent anxiety literacy, this research gap is particularly stark.

Therefore, it is proposed that the present study will aim to address this gap in the literature by assessing the level of MHL, across a variety of anxiety disorders (GAD, panic disorder, social anxiety disorder, and a control scenario; situational stress), in a sample of adolescents in Ireland.

## **2.5. Research questions and hypotheses:**

### **Research Questions**

#### **1. What is the general level of anxiety literacy among a sample of adolescents in Ireland?**

Specifically, the study will examine the following research questions relating to adolescent anxiety literacy:

- Can adolescents correctly recognise GAD, panic disorder and social anxiety disorder?
- What is the perceived impact of GAD, panic disorder and social anxiety disorder on daily life?
- How concerned are adolescents for the wellbeing of hypothetical peers displaying symptoms of GAD, panic disorder and social anxiety disorder?
- What is the perceived prognosis for GAD, panic disorder and social anxiety disorder among adolescents?
- What underlying causes do adolescents most frequently endorse for hypothetical peers displaying symptoms of GAD, panic disorder and social anxiety disorder?
- Do adolescents recognise the need for external help for GAD, panic disorder and social anxiety disorder?
- What actions do adolescents suggest taking to help a hypothetical peer with GAD, panic disorder or SAD?

#### **2. How does anxiety literacy vary across anxiety disorder?**

The study will also examine how each of the components of MHL outlined above vary across anxiety disorders.

#### **3. How does anxiety literacy vary by participant gender?**

The study will also examine how each of the components of MHL outlined above vary by participant gender.

## **Hypotheses**

- 1. Hypotheses relating to adolescent anxiety literacy:** While there is currently insufficient high-quality research into anxiety literacy, it is expected based on the existing studies that anxiety literacy will be poor overall, as anxiety literacy appears to be worse than that of other disorders, and adolescent MHL appears to be poorer than that of adults (Wright et al., 2005; Kelly & Jorm, 2007; Burns et al., 2006; Byrne et al., 2015). In addition to more commonly used measures of MHL (e.g., recognition), the present study is also including a question on perceived impact of symptoms on the person's ability to manage in day-to-day life, in order to assess perceived severity; this is largely an exploratory question given the lack of previous studies which incorporate similar items into their MHL measures.
- 2. Hypotheses relating to the comparison of anxiety literacy across anxiety disorders:** It is expected that MHL will vary across anxiety disorders, and also that MHL will vary within individual disorders, across components of MHL; essentially it is expected that a unique pattern of MHL will emerge for each disorder. MHL for each disorder must be examined individually in detail, in order to understand how participants conceptualise each disorder as a whole, as well as in comparison with each other. While specific predictions across components of MHL and disorder are difficult given the methodological inconsistencies in the literature and lack of studies directly comparing multiple anxiety disorders at once, some general hypotheses can be made based on previous research; it is expected that correct recognition of disorders will be low across disorders (Coles & Coleman, 2010; Furnham & Lousley, 2013) that level of concern will be lower for GAD and social anxiety disorder than for panic disorder (Coles et al., 2014), that participants will be more likely to recognise the need for help for panic disorder than GAD and social anxiety disorder (Coles



et al., 2015) and that informal help will be favoured overall (Kelly et al., 2006; Kelly & Jorm, 2007), but that more formal help may be suggested at higher rates for panic disorder (Schubert et al., 2014).

- 3. Hypotheses relating to the comparison of anxiety literacy by participant gender:** Anxiety literacy is expected to be higher across all components and disorders for female participants than males, in line with previous research in anxiety literacy in adults, and MHL in general in adolescents (Burns & Rapee, 2006; Kelly & Jorm, 2007; Furnham & Lousley, 2013; Paulus et al., 2015; Hadjimina & Furnham, 2017; Aluh et al., 2019; Gallagher & Watt, 2019). In contrast, Coles et al (2016) found no significant difference in recognition of social anxiety disorder, however, possibly due to recognition being so low overall.

### 3.1. Introduction

Chapter Two outlined the importance of mental health literacy in the experience of, and likelihood of seeking help for, mental health problems; however stigma surrounding mental illness also plays a significant role. Stigma has been reported as a key barrier to seeking help for mental illness in general, and anxiety specifically, in young people (Rickwood, Deane, Wilson, & Ciarrochi, 2005; Gulliver, Griffiths & Christensen, 2010; Mukolo, Heflinger & Wallston, 2010) and may also influence the help-giving responses of young people towards peers who require support with a mental health issue (Yap & Jorm, 2011).

Numerous different conceptualisations of stigma have been outlined in the literature, with considerable overlap between models. Link and Phelan (2001; 2006) outline related components of stigma; labelling differences in others, endorsing stereotypes, and cognitively separating oneself from those in the labelled group, which results in status loss and discrimination towards them. Corrigan and Watson's (2002) tripartite model of mental illness stigma comprises stereotypes, prejudice (in the form of negative emotional reactions toward the stigmatised individual or group) and discrimination; with the three components being distinct, but related; with endorsement of negative stereotypes prompting a negative emotional response, which may in turn lead to discrimination (Corrigan & Watson, 2002). There is significant overlap between these two models, with the general consensus of both being that stigma is a multi-component construct, and that in order to fully evaluate and understand stigma, all components must be examined (Link & Phelan, 2001; Corrigan & Watson, 2002).

Research has consistently shown stereotypes, prejudice and discrimination to be interrelated (Devine, 1989; Corrigan et al., 2001; Rüsçh, Angermeyer & Corrigan, 2005). Corrigan and Watson's (2002) tripartite model of stigma is frequently utilised in the context of adolescent mental health research. The tripartite model of stigma has been validated in adolescent populations, with a study

by Silke, Swords and Heary (2016) showing that the underlying structure of adolescent depression stigma reflected the three stigma components of stereotypes, prejudice and discrimination.

Studies examining mental illness stigma also vary in terms of the perspective from which stigma is being examined; **personal** stigma (the stigma held by a particular person or group of people toward the mentally ill), **perceived** stigma (how people expect *most* people to react to the mentally ill) and **self-stigma** (whereby mental-illness stigma is internalised by those with mental illness and applied to themselves) (Corrigan & Watson, 2002; Grant, Bruce & Batterham, 2016). The present study focuses on personal stigma, that is, people's own beliefs about people with mental illness, and how these interact with MHL and help-giving intentions.

### **3.2. Impact of Mental Illness Stigma**

Mental illness stigma has been cited as a major barrier to seeking-help by those with mental illness (Crumb, Mingo & Crowe, 2019). In addition to being a barrier to help-seeking and help-giving, the impacts of stigma for adults with mental illnesses are far reaching, negatively affecting employment opportunities, access to housing, educational attainment and engagement, and interpersonal relationships (Munoz, Sanz, Perez-Santos & De Los Angeles Quiroga, 2011, Corrigan, Bink, Fokuo & Schmidt, 2015; Link & Phelan, 2014; Wada et al; 2019).

Consistent with findings from the adult literature, mental illness stigma has been found to exert significant, negative social, emotional and health outcomes on affected children and adolescents, inducing feelings of fear, embarrassment and shame, and providing a barrier to disclosure, treatment seeking, and treatment adherence (Byrne & Swords, 2015; Chandra and Minkovitz, 2007; Gulliver, Griffiths & Christensen, 2010; Moses, 2009; Moses, 2010; Polanczyk, Salum, Sugaya, Caye & Rohde, 2015). Children and adolescents also report problematic peer relationships, and there is evidence that mental illnesses are associated with peer victimisation at higher rates than physical and intellectual disabilities or chronic illness (Heary et al., 2014). The impact of stigma in these early life stages may be even more acute than it is for adults considering how children are

less able to advocate for themselves due to their lower social standing (Hinshaw, 2005).

Developmentally, acceptance and positive peer relationships are vital to their emerging sense of self, and rejection can adversely affect their psychological and physical wellbeing (Kroger, 2007; Rubin, Bukowski, & Bowker, 2015). The stigmatization of children and adolescents with mental health difficulties is thus a formidable impediment in improving their quality of life and treatment outcomes. Comprehensively understanding the nature, expression and maintenance of stigmatising responses in order to inform the development of effective stigma intervention strategies needs to be a priority area of concern for researchers and policy makers.

### **3.3. Reviewing the literature on mental illness stigma**

As in the MHL literature, described previously, the bulk of the research into mental illness stigma has focused on either “mental illness” generally, or on depression and schizophrenia as specific diagnoses. Early studies in the area have shown these conditions to be consistently associated with a fear of potential violence, perceptions of unpredictability and dangerousness, and a desire for social distance among the general public (Angermeyer & Matschinger, 1996; Phelan & Link, 1998; Link, Yang, Phelan & Collins, 2004). More recently, implicit bias measures have found stronger negative associations than positive toward mental illness (Young, Goldberg, Struthers, McCann & Phills, 2019). Studies have also shown that the public dehumanise people with mental illness, perceiving them as being less than human (Boysen, Isaacs, Tretter & Markowski, 2020).

#### *3.3.1. Anxiety Stigma: Beyond Fear?*

Anxiety disorders had, until relatively recently, been neglected in the mental illness stigma literature, as in the MHL literature. As interest in mental illness stigma has increased, so too has inclusion of anxiety disorders in stigma studies. Some studies measuring anxiety stigma do so along with stigma towards other disorders, but do not report descriptive stigma results by disorder (e.g., Reavley & Jorm, 2014). Research has, however, begun to examine anxiety stigma more directly, and suggests that the nature of anxiety stigma may differ qualitatively from that of other disorders.

Specifically, it seems that the pervasive stereotypes of dangerousness and unpredictability seen with other mental illnesses are either not endorsed in relation to people experiencing forms of anxiety (Crisp, Gelder, Rix, Meltzer & Rowlands, 2000) or are endorsed to a lesser extent when compared with other mental illnesses like schizophrenia (e.g. Wood, Birtel, Alsawy, Pyle & Morrison, 2014).

Instead, research suggests that other stereotypes may be more likely to be associated with anxiety disorders, with anxiety disorders particularly associated with endorsement of the “weak-not-sick” stereotype, in which symptoms are seen as the result of a personal weakness rather than a legitimate condition (Yap et al., 2014), a finding that has been consistently found across studies of anxiety disorder stigma, summarised by a recent review by Curcio & Corboy (2020). However, it must be noted that most studies included in this review included social anxiety disorder as the only anxiety disorder.

While most studies in this area have focused on adult samples, studies involving child and adolescent anxiety stigma are in line with the above findings. Regarding the particular anxiety disorders examined, studies here have predominantly focused on social anxiety disorder/social phobia, and posttraumatic stress disorder (PTSD), typically including these conditions along with other mental illnesses to compare stigmatising responses, rather than focusing on anxiety stigma in depth. At first glance it may appear as though anxiety disorders are less stigmatised than others, typically psychosis. For example, Arbanas (2008) noted how schizophrenia was generally more stigmatized than either PTSD or depression among a sample of Croatian adolescents. In addition, in their work with nationally representative samples of Australian 12- to 25-year-olds, Reavley and Jorm (2011c) and Jorm and Wright (2008) found that the desire for social distance was generally higher for a vignette character presenting with psychosis than with other mental illnesses including social phobia. However, exploring the specific dimensions of stigma assessed in these studies suggests a more complex pattern of reactions, where disorders rated negatively on one dimension

may not be so negatively evaluated on another. As in the findings on adult stigma, adolescents and young people were less likely to endorse perceptions of dangerousness and unpredictability for people with social anxiety when compared with psychosis (Jorm & Wright, 2008; Reavley & Jorm, 2011c). Instead, they instead associate social phobia with personal weakness and believe that the condition is not a real medical illness (Reavley & Jorm, 2011c). Similar conclusions were drawn from a study with Japanese adolescents reported by Yoshioka, Reavley, MacKinnon and Jorm (2014).

Other studies have found that endorsement of the “weak not sick” belief in response to anxiety is consistently found in terms of both personal and perceived stigma, and associated with a desire for social distance (Reavley & Jorm, 2014; Yap, Wright & Jorm, 2011), and lower help-seeking intentions and less positive beliefs about the efficacy of professional help (Yap, et al., 2011). It may be the case then that anxiety is more likely to be associated with perceptions of blame and personal responsibility than other disorders (Wood et al., 2014; Hasan & Musleh, 2017). Such perceptions are major contributing factors to negative attitudes and discriminatory behavioural intentions in the child and adolescent mental health literature (Hennessy, Swords & Heary, 2008; Kaushik, Kostaki & Kyriakopoulos, 2016), though perceptions of blame differ according to diagnosis, as in adult populations, and more research is needed here (Kaushik et al., 2016).

Very few studies to date have had a specific focus on anxiety stigma in children and adolescents. Callear, Batterham, Griffiths and Christensen (2017) reported that stigmatising attitudes towards generalised anxiety disorder (GAD) are common among adolescents, but noted higher levels of perceived stigma (i.e. an individual’s perception of other people’s stigmatising beliefs) than personal stigma (i.e. an individual’s personal stigmatising beliefs). As GAD is a relatively common mental illness, with a 12-month prevalence rate of approximately 2%, and accounting for up to ten percent of mental disorders seen in primary care, stigma toward this disorder represents an important target for intervention (Lieb, Becker & Altamura, 2005; Harley et al., 2015; Ruscio et al.,

2017). The researchers examined potential predictors of negative responses and suggested that adolescent boys and teenagers with lower anxiety literacy scores were among the groups that might be worthwhile targets for intervention. Arbanas (2008) also noted that adolescent boys with less specific knowledge of psychiatry were more stigmatising in their views of PTSD. Higher personal stigma has consistently been found to be higher in males than females, across a range of mental illnesses, including depression and anxiety (Batterham, Griffiths, Barney & Parsons, 2013; Anderson et al., 2015; Dolphin & Hennessy, 2016; Grant, Bruce & Batterham, 2016; DuPont-Reyes, Villatoro, Phelan, Painter & Link, 2019). Identifying correlates of mental health stigma is important in order to attain a greater understanding of negative attitudes and reactions. The relationships between stigma, mental health literacy and help-giving responses will be discussed further in Chapter 4.

### *3.3.2. Adolescent Mental Illness Stigma: Social Focus?*

Child and adolescent stigma, particularly mental illness stigma, is relatively under-researched, and thus less well-understood than adult stigma. However, studies do suggest that even very young children can identify behaviour that deviates from “the norm” and stigmatise others (Hennessy, Swords & Heary, 2008; Wahl, 2002). In some instances, these negative responses can intensify as children grow older (Griffiths, Christensen & Jorm, 2008; O’Driscoll, Heary, Hennessy & McKeague, 2012; Swords, Hennessy & Heary, 2011). Children with mental health difficulties have also reported being on the receiving end of negative stereotypes, prejudice and discrimination (Heary, Hennessy & Swords, 2014; Heary, Hennessy, Swords & Corrigan, 2017). Peer relationships for these young people can be problematic, and research indicates that mental illnesses are associated with peer rejection or victimisation at higher rates than physical and intellectual disabilities or chronic illness (Heary et al., 2014). Developmentally, acceptance and positive peer relationships are vital to children’s emerging sense of self, and rejection can adversely affect their psychological and physical wellbeing (Kroger, 2007; Rubin et al., 2015).

Given the unique developmental context of childhood and adolescence, it cannot be assumed that stigma measures developed with adult populations will necessarily capture the full picture and nuance of stigma in younger age groups. Just as anxiety disorders may have their own distinct pattern of stigma compared to other disorders, adolescent mental illness stigma may have its own distinguishing features compared to that of adults. Indeed, there is evidence to suggest that adolescents' stereotypical beliefs about peers with a mental illness are particularly focused on perceived negative social functioning. For example, qualitative work by O'Driscoll et al. (2015) with Irish adolescents found that unique stereotypes and prejudice were offered by participants when reasoning about the exclusion of peers with ADHD or depression. Specifically, it was proposed that peers with mental illness may be rejected because they may not conform to the norms and reciprocity expectations that young people apply to their friendships. Similarly, quantitative work by Silke, Swords and Heary (2017) with another sample of Irish adolescents noted how their 'descriptive norms' or beliefs about how their friends might respond to a peer with depression exerted a substantial effect on their explicit stigmatising responses. These findings suggest that discrimination and social rejection toward adolescent peers with mental illness goes beyond fear of violence, which has previously been found to have a key role in the adult mental illness stigma literature in general. Therefore, mental illness stigma must be considered within the developmental context in which it occurs.

#### **3.4. Critical Considerations and Conclusions**

A number of significant flaws and inconsistencies are present in the stigma literature which must be considered when interpreting the results of studies in this area. For over a decade now researchers in the field of mental illness stigma have argued the importance of examining individuals' responses to specific conditions separately, as stigma can vary according to the type of condition examined, both in terms of intensity and the dimension of stigma assessed (Stier & Hinshaw, 2007; Weiss, Ramakrishna, & Somma, 2006). This appears true with regard to anxiety



disorders where evidence presented here suggests that subtypes like PTSD or social phobia may be less stigmatised than conditions like psychosis with regard to stereotypes of dangerousness and unpredictability and discrimination in the form of a desire for social distance (Arbanas, 2008; Jorm & Wright, 2008).

However, stigmatising beliefs about personal responsibility, weakness or blame seem to be highly endorsed for this condition instead (Yap, Wright & Jorm, 2011; Reavley & Jorm, 2014).

Unfortunately, either in adult or child samples, little more is known about other potential stereotypical beliefs relating to anxiety, how these beliefs may relate to the development of prejudice, and how discrimination toward those with clinical anxiety disorders presents itself.

Findings from the small body of work that does exist should be interpreted with caution. Some studies comparing stigmatising responses to subtypes of anxiety disorders along with other mental illnesses tend not to provide a breakdown of stigma results by disorder (e.g. Reavley & Jorm, 2014; Yap, Wright & Jorm, 2011). Others fail to explicitly define what aspect of anxiety they are considering (e.g. Wood et al., 2014; Hasan & Musleh, 2017). Both issues make detailed interpretation of results difficult. Anxiety is not one condition, but a group of disorders. It cannot be assumed that stigma associated with one subtype is the same for another, and yet there are essentially no studies comparing stigma across the anxiety disorders, representing a significant gap in the research.

Another concern, even in the broader mental illness stigma literature, is that many studies are not directly comparable to one another because of differences in methodology, approach and focus.

For example, a common methodological difference between studies is that of measuring stigma based on response to case vignettes describing symptoms (e.g. Jorm & Wright, 2008) versus measuring stigma based on diagnostic labels (e.g. Crisp et al., 2000). These approaches may potentially be tapping into different kinds of stigma; the stigma in response to the *behaviour* of someone with mental illness, versus the stigma in response to one's preconceived associations

with a diagnostic label. Both are of interest, but may not be suitable for comparison in a meaningful way.

In addition to this, many stigma survey instruments were developed from early research on schizophrenia or depression stigma with adults, and thus may not translate adequately when measuring stigma toward other mental health conditions, including anxiety. Furthermore, tools validated to measure stigma in adults may not adequately capture the phenomenon with children and adolescents, both in terms of the presentation of the condition and stigmatising responses to it (e.g. Weems & Costa, 2005). Indeed, findings by O'Driscoll et al (2015) and Silke et al (2017), discussed previously, indicate that social exclusion of peers with mental illness among adolescents is more likely to be influenced by social concerns than the perceptions of dangerousness or feelings of fear commonly reported in the adult stigma literature (Angermeyer & Matschinger, 1996; Phelan & Link, 1998; Link, Yang, Phelan & Collins, 2004).

The theoretical conceptualisation of stigma and the lack of a systematic approach to its study represents a further issue that warrants attention in future research. Stigma is a complex multidimensional construct hypothesised to comprise separate cognitive, emotional and behavioural components (Corrigan & Watson, 2002; Link & Phelan, 2001). Although the tripartite conceptualisation of stigma is frequently referred to in the adolescent literature and has been empirically endorsed (Silke, Swords & Heary, 2016), only a handful of research studies in the general adolescent mental illness literature assess all three components (McKeague, Hennessy, Heary, O'Driscoll, 2015). In order to fully evaluate stigma, each of these components should be assessed. Contrary to this, few studies explicitly define stigma, or refer to any conceptual model. Instead, most focus on only one component of stigma, such as stereotypes (e.g. Crisp et al., 2000). For this reason, it appears that the full stigma construct is not currently being measured or assessed by most research in the area.

This in turn has led to studies examining the underlying “structure” of mental illness stigma by analysing the results of survey instruments that may not adequately measure the stigma construct. For example, Jorm and Wright (2008) found that stigma consisted of social distance, dangerousness, weak-not-sick beliefs and perceived stigma – however, these were simply the dimensions measured by their questionnaire – the authors themselves note that the dimensions of stigma found depend on the items included in a measure (Jorm & Wright, 2008, p.146). It is important that future work aims to fully investigate the structure of each of the independent stigma components, in order to develop a broad stigma measure that is useful across mental illnesses and which fully captures the breadth of the stigma construct.

In conclusion, stigma toward people with anxiety disorders has been relatively neglected in the research literature compared to other disorders, particularly in adolescent samples. The work which has been done suggests that commonly endorsed stereotypes for other mental illnesses, such as perceptions of dangerousness, and affective responses such as fear, may be less relevant for anxiety disorders, with perceptions that of personal weakness and blame endorsed for anxiety disorders instead. However, far more research is needed to confirm this, particularly in order to examine and compare differences in stigma across the anxiety disorders themselves, which represents a specific gap in the research literature.

Additionally, there is evidence that the content and focus of mental illness stigma may be particularly trained on social concerns and peer relationships in adolescents, which warrants further research with stigma measures which are broader than those developed exclusively with adult populations. Finally, future research must measure multiple components of stigma, in order to obtain a full picture of stigma, as well as to facilitate examination of how the different components of stigma – stereotypes, prejudice and discrimination – may interact with each other, and with other factors, such as help-giving responses and mental health literacy.

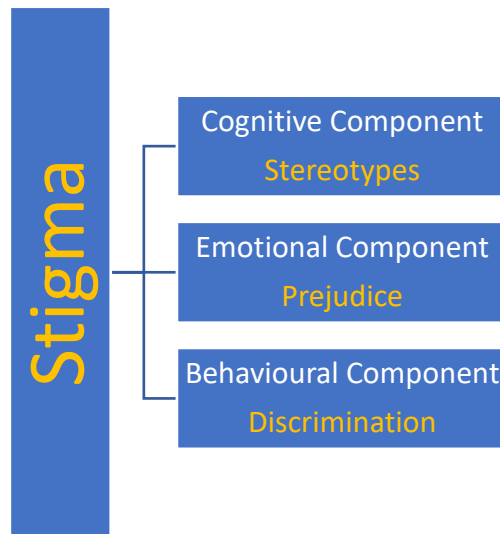


Figure 3.1. Conceptual model of stigma as measured in the present study

The present study will attempt to address this gap in the research by examining mental illness stigma, across a range of anxiety disorders (generalised anxiety disorder, panic disorder, and social anxiety disorder) as well as a non-clinical control (situational stress), in an adolescent sample. The present study will use the tripartite conceptualisation of stigma outlined by Corrigan and Watson (2002), and include measures of stereotypes, prejudice, and discrimination. These three components of stigma have consistently been demonstrated in research to be interrelated, highlighting the important of measuring all three, in order to gain insight into the process of stigmatising responses (Devine, 1989; Corrigan et al., 2001; Rüsche, Angermeyer & Corrigan, 2005). Additionally, this model has been validated in adolescent populations, suggesting it is appropriate for use in the present study (Silke, Swords & Heary, 2016).

### 3.5. Research Questions and Hypotheses:

1. To what extent do a sample of adolescents display stigma towards hypothetical peers with GAD, panic disorder and social anxiety disorder?

Specifically:

- To what extent do adolescents endorse negative stereotypes for hypothetical peers with GAD, panic disorder and social anxiety disorder?
- To what extent do adolescents displace prejudicial responses toward hypothetical peers with GAD, panic disorder, and social anxiety disorder?
- To what extent do adolescents express a desire for social distance from hypothetical peers with GAD, panic disorder, and social anxiety disorder (i.e., discrimination)?

2. How does anxiety stigma vary across anxiety disorder?

The study will also examine how each of the components of stigma outlined above vary by anxiety disorder.

3. How does anxiety stigma vary by participant gender?

The study will also examine how each of the components of stigma outlined above vary by participant gender.

### Intentions: Literature Review

#### 4.1 Introduction:

This chapter will examine the relationships between specific components of MHL, stigma, and help-giving. It will first discuss the general literature in this area, which is largely exploratory in nature. This will be followed by discussion and review of some more theoretically-driven approaches to investigating the relationship between these constructs, and will end with a set of research questions and hypotheses for the present study.

#### 4.2. Exploring the relationships between MHL, stigma, and help-giving: A summary of the literature to date

The study of the relationship between MHL, stigma and help-giving intentions in the literature to date has, for the most part, been exploratory in nature, with relatively few studies taking a theory-driven approach or discussing the potential underlying mechanisms that may explain any relationships found. Additionally, the nature of the constructs of MHL and stigma, with their multiple distinct components, has led to variations across studies in the measures used, making direct comparison difficult. As a result of both of these issues, the literature in this area is piecemeal, and difficult to interpret in terms of a “big picture” of the interactions between MHL, stigma and help-giving intentions. As will be described, the findings vary by methodology and disorder studied, but the inconsistency in the former means any differences between disorders across studies cannot necessarily be assumed to be consistent. Additionally, as in other areas of the literature, there is a particular lack of research into how these factors interact in the context of clinical anxiety disorders. The studies which are described in this section have examined the relationship between components of MHL and stigma but are not grounded in any particular theoretical approach, and neither provide nor test any specific underlying mechanisms which might explain associations between these constructs. The purpose of this section is to summarise

the findings so far in this area. Studies which examine the relationship of MHL and stigma to help-giving intentions are reviewed in a later section, as they have tended to be more grounded in theory.

#### *4.2.1 Exploring the relationship between overall MHL and stigma*

Some studies use a total measure of MHL to examine the relationship between MHL and stigma. Lower anxiety literacy overall was found to be associated with higher personal stigma (on a solely stereotype-based measure) by Calear et al. (2017). Lower depression literacy overall has also been found to be associated with higher personal stigma toward depression on a stigma measure which included both stereotypes (contagion, WNS, dangerousness) and a social distance measure (Griffiths, Christensen & Jorm, 2008). Neither the Calear et al. (2007) nor Griffiths et al. (2008) study specify what components of MHL they measured in their studies, making it difficult to interpret the results in terms of the role of overall mental health literacy as opposed to specific components. Indeed, research which instead examines the relationship between specific components of mental health literacy, stigma and help-giving intentions often shows different relationships, depending on the components measured. Many studies also examine the relationships between the various components of MHL with each other.

#### *4.2.2 Exploring the relationship between recognition of mental disorders and stigma*

Ability to label or recognise mental illness, a component of MHL, has frequently been investigated for associations with stigma. People's own ability to recognise depression correctly has been found to be associated with lower levels of anger toward the depressed person, when the vignette character used was female (Dolphin & Hennessy, 2016). Yap, Reavley, Mackinnon and Jorm (2013) examined the role of ability to label a variety of mental disorders (depression, social phobia, PTSD and psychosis) on stigma (WNS, dangerousness and social distance). They found that accurate labelling was associated with significantly lower weak-not-sick beliefs for all vignettes, and less dangerousness for social phobia (Yap et al., 2013). Wright, Jorm and Mackinnon (2011) also found

that accurate labelling predicted less endorsement of weak-not-sick beliefs, for depression, social phobia and psychosis, however accurate labelling for psychosis also predicted increased perceptions of dangerousness and unpredictability. Similarly, Lynch, McDonagh and Hennessy (2020) found that adolescents' ability to correctly recognise social anxiety was associated with lower stigma (stereotypes, prejudice and desired social distance). However, the same relationship was not found for depression (Lynch et al., 2020). A study by Wang and Lai (2008) also found no differences in personal stigma (WNS, dangerousness, desired social distance) associated with ability to recognise depression. Effect of labelling mental disorders on desired social distance was examined in a review by Jorm and Oh (2009); results varied, as did the methodologies used in the studies included in the review (participants' own ability to label versus experimental manipulation of labels) but generally, use of labels was associated with greater desired social distance, in contrast to other studies in the area (Jorm & Oh, 2009). Overall, these results are mixed with regard to the association between recognition of disorders and stigma, but suggest a general trend toward ability to recognise disorders being associated with lower stigma, although it depends on the stigma component being measured, as well as the disorder being studied.

#### *4.2.3 Exploring the relationship between causal beliefs and stigma*

Another component of MHL which has frequently been studied in the context of its relationship to both other components of MHL, and to stigma, is beliefs about the causes of mental disorders. Yoshioka et al. (2016) examined the association between causal beliefs and stigma toward depression and schizophrenia. They found reduced endorsement of the WNS stereotype when psychosocial causes such as stress, trauma, and problems from childhood were endorsed for depression (Yoshioka et al., 2016). They also found that belief in inherited or genetic causes for depression, and personality-based causes for depression and schizophrenia were associated with increased perceptions of dangerousness and unpredictability. This study notably did not include a "chemical imbalance" item in the list of potential causes, and did not include a prejudice



(emotional reactions) component for stigma (Yoshioka et al., 2016). Reavley and Jorm (2014) also found that specific causal beliefs were associated with differing levels of stigmatising responses (in the form of negative stereotypes and desired social distance) toward mental disorders (depression, schizophrenia, social phobia and PTSD). Specifically, they found that endorsement of a weak or nervous personality was associated with greater stigmatising attitudes (WNS and perceived dangerousness/unpredictability) and desired social distance across disorders. It should be noted that this study included WNS as part of the stigma measure, which overlaps conceptually with the weak personality item included in the potential causes; indeed, the authors found a moderate correlation between the two measures (Reavley & Jorm, 2014). Biogenetic causes were associated with reduced endorsement of the WNS stereotype across vignettes, but no change in perceptions of dangerousness or unpredictability, or in desired social distance (Reavley & Jorm, 2014). Endorsement of psychosocial causes was not associated with desired social distance, but was associated with decreased WNS endorsement for depression with suicidal thoughts and PTSD, and increased WNS endorsement for schizophrenia (Reavley & Jorm, 2014). Jorm and Oh (2009), reviewing the literature, found no consistent evidence that endorsement of genetic or biochemical causes was associated with increased desired social distance, but consistent evidence that belief in character weakness as the cause of mental disorders is associated with an increase in desired social distance. Again, there is conceptual overlap here between character weakness as a cause, and the WNS stereotype.

#### *4.2.4 Knowledge and beliefs about appropriate treatment; relationship to causal beliefs, recognition of mental disorders, and stigma*

Perceived cause of disorder has also been associated with knowledge and beliefs about appropriate treatment, which is itself a component of MHL. Samouilhan and Seabi (2010) found that for depression, endorsement of a genetic/inherited cause and social factors as a cause were both strongly associated with endorsement of self-help or dealing with the problem alone. They

also found a strong positive association between belief in a chemical imbalance as the cause and endorsement of medication as a treatment (Samouilhan & Seabi, 2010). Negative associations were found between belief in chemical imbalance as a cause and endorsement of therapy/counselling as a treatment, as well as between belief in stressful events as a cause and endorsement of medication as a treatment (Samouilhan & Seabi, 2010). Essentially, the findings of this study indicated that beliefs about appropriate treatment were broadly congruent with beliefs about aetiology. However, the sample sizes for some of the correlations were extremely small, as the authors had asked participants to rank the most important cause rather than rate likelihood of each cause.

Knowledge of appropriate help in turn has been linked to recognition of mental disorders and stigmatising responses. The ability to correctly recognise depression, along with lower stigma levels, was associated with higher quality help-giving suggestions in a study by Amarasuriya et al. (2017). Recognition of depression (or use of other mental-health related labels) was associated with higher odds of suggesting the person seek professional help. Endorsement of the weak-not-sick stereotype was associated with relatively higher rates of offering support, but relatively lower rates of encouraging the person with depression to seek professional or informal support (Amarasuriya et al., 2017). Both correct recognition of depression and lower levels of stigma have consistently been associated with more appropriate help-giving suggestions; such findings were reported by Jorm et al. (2005), although the specific stigma components measured were not specified in this study. Wright, Jorm, Harris and McGorry (2007) found that ability to label the disorder correctly was the most important predictor of knowledge of appropriate help for both depression and schizophrenia. Similar results were found by Mason, Hart, Rossetto and Jorm (2015) for depression with suicidal thoughts, but not for social phobia. Wright, Jorm and Mackinnon (2012) found that accurate labelling predicted a preference for professionally-recommended sources of help across a range of disorders in a sample of 12-25 year-olds. Mason et al. (2015) also found that lower endorsement of the WNS stereotype was associated with higher

quality help-giving suggestions for both depression and social phobia (Mason et al., 2015). In contrast, Byrne, Swords and Nixon (2015) found that ability to identify depression did not influence the type of help suggested in a sample of adolescents.

Unhelpful help-giving suggestions have also been associated with higher desired social distance in a study by Kelly and Jorm (2007). In contrast, knowledge of appropriate help (in the form of agreement with professionals on treatment) was not found to be associated with personal depression stigma, with regard to either the WNS or dangerousness stereotypes, or desired social distance, in a study by Wang and Lai (2008). This again illustrates a pattern of inconsistent results across studies. It is worth noting that the majority of the studies discussed above did not include a measure of prejudice in their conceptualisation of stigma.

#### *4.2.5 Exploring the relationships between stigma, help-giving efficacy and previous contact with a person with mental illness*

Other factors related to MHL which are frequently examined for their relationship to stigma are help-giving efficacy and previous contact with a person with mental illness. Low confidence in giving help has been associated with higher desired social distance (Kelly & Jorm, 2007). Previous contact with a person with mental illness has been found to be associated with decreased fear, discomfort, and desire for social distance (Angermeyer & Matschinger, 1996b; Dolphin & Hennesy, 2016). Previous exposure to or experience of anxiety disorders was found to be associated with lower anxiety stigma on a stereotype-based measure (Batterham, Griffiths, Barney & Parsons, 2012). Jorm and Oh (2009) found that previous contact with a person with mental illness was associated with less desired social distance, as was personal experience of mental illness. Lower previous contact with depression was associated with higher personal depression stigma (stereotypes and social distance) (Griffiths et al., 2008). Contact with friends or family members with similar problems to those depicted in a vignette (describing either depression, social phobia, PTSD or psychosis) was associated with lower levels of WNS endorsement for all vignettes other

than psychosis in a study by Yap et al. (2013). The same study also found previous contact to be associated with lower social distance for depression and social phobia, but not the other vignettes (Yap et al., 2013). In contrast, Wang and Lai (2008) found no significant relationship between previous contact with depression and personal stigma, and a 2016 review by Kaushik and colleagues found inconsistent associations between familiarity with mental illness and stigmatising attitudes in children and adolescents (Kaushik et al., 2016). Again, the literature points tentatively to a general trend - previous contact with a person with mental illness is associated with decreased stigma – but that this appears to vary depending on stigma measure used, disorder studied, and possibly age of participants.

#### 4.2.6

##### *Summary of the above literature*

The results described in the literature on the relationships between MHL and stigma are mixed, scattered and complicated by the fact that both MHL and stigma are constructs with multiple distinct components. The majority of the studies described above are cross-sectional, and as such, no assumptions can be made about causality or direction of relationships. This issue is further compounded by the lack of theoretical grounding; few specific predictions or suggestions are given as to how or why the relationships in question may be present, that is, there is no discussion of the underlying processes involved.

That said, some general trends can be cautiously summarised. Recognition of mental disorders is generally associated with lower stigma (Yap et al., 2013; Lynch et al., 2020) although this appears to vary by disorder, and some studies have found no such relationships (Wang & Lai, 2008). Causal beliefs have consistently been found to be related to stigma (Jorm & Oh, 2009; Reavley & Jorm, 2014), although again this appears to vary by disorder, specific causal belief in question, and component of stigma measured; some relatively consistent findings in the literature include increased perceptions of dangerousness/unpredictability with endorsement of inherited/genetic

and personality-based causes, and reduced endorsement of the WNS stereotype with belief in psychosocial causes. Specific causal beliefs, correct recognition of mental disorders and lower levels of stigma have all been associated with better knowledge of appropriate help (Jorm et al., 2005; Wright et al., 2007; Samouilhan & Seabi, 2010; Mason et al., 2015; Amarasuriya et al., 2017) although again these relationships vary by disorder (Mason et al., 2015) and have not been found at all in some studies (e.g. Byrne et al., 2015). Additionally, some specific causal beliefs, for example, chemical imbalance, are associated with increased endorsement of some forms of appropriate help (e.g., medication) and reduced endorsement of others (e.g., therapy/counselling). Differences in the stigma measures used across these studies make direct comparisons difficult.

What is clear is that the distinct components of MHL likely have unique relationships with the various components of stigma, and indeed with each other. This makes discussion of overall MHL less meaningful than that of specific elements of it, when examining how MHL relates to other constructs. While the lack of a systematic, theory-driven approach in the previous studies is a limitation, it must be noted that due to the complexity of the constructs involved, an overarching theoretical model linking all of the components of MHL to all of the components of stigma, as well as to help-giving intentions and other factors such as previous contact with a person with mental illness does not currently exist, and likely would not be appropriate or particularly useful.

Instead, it may be the case that discrete hypotheses and research questions should be posed regarding specific relationships between specific components of these constructs, driven by existing theory, to attempt to model or test specific branches of the relationship between the three main constructs of MHL, stigma and help-giving. A number of studies have been driven by, or provide discussion of theory in their examination of the relationship between MHL, stigma and help-giving, most frequently focusing on attribution theory and psychological essentialism. The bulk of the studies which examine the relationship of help-giving intentions to MHL and stigma

take one of these approaches. These studies and their underlying theory are discussed in section 4.3 below.

### **4.3 Theory-driven approaches to examining the relationship between MHL, stigma and help-giving**

#### *4.3.1 Background: Attribution theory and psychological essentialism*

Numerous studies have utilised attribution theory to structure their analyses and aid in their interpretations of responses to people with mental disorders, in terms of both help-giving and stigmatising responses (Rudolph, Roesch, Greitemeyer & Weiner, 2004; Dolphin & Hennessy, 2014; Muschetto & Siegel, 2019). Grounded in the theory developed by Weiner (1980; 1985) attribution theory focuses on the role of beliefs about the cause of a problem or situation (i.e., causal attributions) on behavioural responses, and puts forward a framework of cognition-emotion-behaviour, whereby emotions mediate the relationship between thoughts and behaviour (Rudolph et al., 2004). From this perspective, when a person is asked for help, they conduct a causal search for why that help is needed, and arrive at a causal inference, the characteristics of which then influence behaviour (Weiner, 1980; Rudolph et al., 2004). In the context of mental illness, the causal dimensions of controllability (the person's perceived ability to change their circumstances) and stability (the perceived duration of the problem) have been particularly important (Rudolph et al., 2004; Muschetto & Siegel, 2019). Perceived controllability is the most frequently studied dimension in this context.

In their meta-analytic review of help-giving and aggressive behaviour generally (i.e. not specifically relating to mental illness), Rudolph et al. (2004) lay out the role of perceived controllability of cause; if a person is seen as being in control of the situation in question, then they may be perceived to be personally responsible. This perceived responsibility in turn leads to anger, while lack of perceived controllability results in no perception of responsibility, and elicits sympathy instead (Rudolph et al., 2004). It is through these emotional responses of anger and sympathy

then, that the decision of whether or not to help (or indeed, respond with aggression) is influenced; emotions taking on the role of mediators between cognition and behavioural intention. Anger is posited to negatively influence the decision to help, while pity or sympathy is seen to positively influence the decision to help (Rudolph et al., 2004). The results of the meta-analysis supported this view; perceived controllability of the cause of a person's problem predicted help-giving, and this relationship was mediated by emotion (sympathy and anger). Specifically, controllability was associated with increased anger and decreased sympathy, which in turn were associated with decreased help-giving responses (Rudolph et al., 2004). This has implications for the study of the relationship between MHL, stigma, and help-giving responses, as causal beliefs are an important component of MHL, while perceptions of personal responsibility and blame, along with affective reactions, are key aspects of stigma.

In addition to attribution theory, psychological essentialism has also been implicated in the study of MHL, stigma and help-giving. Essentialism as a concept has been applied to human thinking about many different domains, including scientific categories, but in the context of psychology tends to refer to a tendency for people to erroneously view social categories 'as if they are essence-based "natural kinds" – groupings that are taken to be fixed and potent sources of inference about their members' (Haslam & Ernst, 2002, pp.630). Haslam and Ernst (2002) note that essentialist thinking has a number of distinct components;

*"An essentialist belief typically maintains that membership in a category is fixed or **immutable**. It involves the imputation of an **inhering** nature, something underlying the observable properties of category members. It often involves a belief that the category is **discrete**, having a sharp boundary and all-or-nothing membership that is determined by **defining** (necessary and sufficient, i.e., essential) features. It takes category members to be homogeneous or **uniform** because they are all fundamentally the same. It views the category as in some sense **natural** rather than socially constructed. It involves a belief that the*

category is unusually **informative** about its members, affording many inferences about them or having what philosophers call “inductive potential.” Finally, it supposes that the category exists independently of human language, society and culture—essence-based categories are not products of labelling practices, social influences or cultural construction—so it is taken to be **historically invariant** and perhaps culturally universal.” (Haslam & Ernst, 2002, pp.631).

At its core, essentialist thinking about a particular social group implies that that members of the group are fundamentally different to those outside of the group, and that this difference is rooted in something naturally occurring, and is enduring and unchangeable, while members of the group are seen as being fundamentally similar to each other. Specific essentialist beliefs about mental disorders, when manipulated, were found associated with corresponding changes in other essentialist beliefs; for example, when participants were told that a disorder was difficult to cure, they were more likely to believe that it was caused by a biological cause, and to view people with the disorder as being similar to each other (Haslam & Ernst, 2002). The authors note that this has implications for how people respond and interpret public health messages about mental illness, and that there may be unintended consequences of presenting the public with specific information, stating:

*“...the present study suggests that laypeople may go “beyond the information given” when they interpret it, drawing a variety of essence-related inferences. These surplus inferences may be scientifically unwarranted. For instance, in response to reports that a disorder is associated with abnormalities of a particular brain chemical (i.e., “biologically based”), people may mistakenly infer that it is a discrete condition that springs from an incurable, specific defect in the person. Such misinterpretations could also proceed in the nonessentialist direction. Evidence for the efficacy of a psychotherapeutic treatment (i.e., mutability) might generate unfounded inferences that the disorder has no biological component, is merely a more severe variant on the continuum of normal distress, and is*



*under personal control rather than being grounded in inherent properties of the person.”*

(Haslam & Ernst, 2002, pp.641).

Essentialist thinking has been associated with increased stigma, particularly stereotyping responses, across a wide range of domains (Levy, Stroessner & Dweck, 1998; Keller, 2006). As such, there are clear implications for the role of essentialist thinking in the context of both MHL and stigma. Some elements of MHL are more relevant to essentialist thinking than others; namely causal beliefs and beliefs about prognosis. Specific causal beliefs, those relating to biologically-based causes such as genetics, or neurochemical imbalance, may be more conducive to essentialist thinking, as they are perceived as being discrete, immutable and natural (Dar-Nimrod & Heine, 2011; Haslam & Kvaale, 2015). Prognosis judgements are also related to perceptions of immutability; whether someone sees a mental disorder as being enduring or temporary. These beliefs – causal and prognosis – are likely related to each other, and in turn to stigmatising responses, from an essentialist perspective.

A review of the literature exploring the relationships between these factors, involving both attribution theory and essentialism, is contained in section 4.3.2 below.

#### *4.3.2 Examining the relationship between MHL, stigma and help-giving from attributional, essentialist perspectives*

The role of perceived controllability of depression on stigma in adolescents was investigated by Dolphin and Hennessy (2014). Perceived controllability was found to predict inferences of responsibility, which in turn were associated with higher levels of anger and lower levels of sympathy (Dolphin & Hennessy, 2014). Sympathy, in turn (but not anger) predicted less desire for social distance from the person with depression. The relationship between perceived responsibility and anger was only present for the male vignette. In a recent study, Muschetto and Siegel (2019) looked at the role of two attribution dimensions - perceived controllability and perceived stability - on stigmatising and help-giving responses to people with depression. The study also looked at the

role of personal relationship to the person with depression, by manipulating whether the vignette character was depicted as being a close friend/family member or an acquaintance of participants. They found that perceived controllability was associated with increased anger and decreased sympathy, which in turn led to decreased willingness to help, and increased desire for social distance, for both acquaintances and close other vignettes; that is, perceived controllability predicted help-giving and desired social distance, and this was mediated by emotion (Muschetto & Siegel, 2019).

Perceived stability was also found to be indirectly associated with help-giving and desired social distance, and mediated by anger and pity, but only in the “close other” scenario, not for acquaintances (Muschetto & Siegel, 2019). That is, they found a significant moderating effect of personal relationship on the indirect effect of perceived stability through affect (sympathy and anger) on help-giving and desired social distance. Specifically, they found that perceiving a close other’s depression as stable (i.e., enduring) reduces sympathy and increases anger, which in turn leads to decreased willingness to help and increased desire for social distance. This relationship was not found for the acquaintance vignette. The authors suggest that this may be due to the duration of depression being more significant to those close to a person with depression than acquaintances; the impact on those close to the person would be greater and longer-lasting (Muschetto & Siegel, 2019).

Other studies have found results that support the hypotheses of attribution theory even when not coming from an explicitly attributional perspective themselves, in particular studies which have examined the relationship between endorsement of specific causes of mental disorders and other aspects of MHL, stigma and help-giving. A review of studies examining child and adolescent mental illness stigma by Kaushik et al. (2016) found that when causal attributions were perceived as being beyond young people’s control, they were not blamed for their condition. They also found that blame was associated with greater desired social distance (Kaushik et al., 2016). Reavley and Jorm’s

(2014) study found that endorsement of a weak or nervous personality as a cause of mental disorders was associated with greater endorsement of both the WNS and dangerousness stereotypes, as well as increased desired social distance. In contrast, belief in biogenetic causes was associated with decreased endorsement of the WNS stereotype, suggesting that biogenetic causes are less likely to be seen as a personal weakness – that is, the person’s own fault – than personality-based causes (Reavley & Jorm, 2014). This study however, did not find an association between biogenetic causes and beliefs about dangerousness, or in social distance. Similar results by Jorm and Oh (2009) link belief in personal weakness to higher levels of desired social distance. A systematic review and meta-analysis by Schomerus et al. (2012) found that there has been a general increase in endorsement of biogenetic explanations and biological models of mental disorders over time, but that this has not been accompanied by a corresponding reduction in stigma. Indeed, they found that such explanations may be associated with increased stigma in the form of negative attitudes towards those with mental disorders, noting that *““While a biogenetic illness model is commonly hypothesized to reduce perceived responsibility and thereby the rejection of mentally ill persons, there is so far no evidence supporting this claim. Instead, attention has been drawn to potentially negative effects of biogenetic causal explanations on the stigma of mental disorders, because they may enhance notions of ‘otherness’, reduce treatment optimism and aggravate anticipations of unexpected and dangerous behaviour”* (Schomerus et al., 2012, p.449). This is supported by previous studies; endorsement of psychosocial causes external to the person, such as stress, trauma, and problems from childhood have been associated with lower levels of belief in the WNS stereotype, while endorsement in genetic causes was associated with increased perceptions of dangerousness toward depression in a study by Yoshioka et al. (2016).

This complexity in the relationship between causal beliefs and responses to those with mental illness is clearly outlined in a meta-analytic study by Haslam and Kvaale (2015). In addition to attribution theory, this paper also discusses the potential role of psychological essentialism in the context of prognosis judgements and stigmatising responses to mental disorders. They found that

biogenetic explanations for mental disorders were associated with reduced blame, but also with increased prognostic pessimism, and increased perceptions of dangerousness and desire for social distance, suggesting that endorsement of particular causes can have both positive and negative effects on stigma, depending on the stigma component measured (Haslam & Kvaale, 2015). The authors propose two separate pathways to explain these results; that attribution theory accounts for the relationship between biogenetic explanations and blame, through attributions of controllability, but that the relationship between biogenetic explanations and desired social distance, perceived dangerousness, and prognostic pessimism may be partially accounted for by psychological essentialism (Haslam & Kvaale, 2015). As has been previously documented, biogenetic causal beliefs are frequently seen as essence-like, and specific essentialist beliefs are often related to each other (Haslam & Ernt, 2002; Dar-Nimrod & Heine, 2011); therefore, belief in a cause that is perceived as being fixed and unchangeable, such as genetics, may lead to more negative beliefs about prognosis – if the cause is seen as immutable, the chances of improvement are perceived to be lower (Haslam & Kvaale, 2015). Additionally, the authors argue, the associations between biogenetic causes and stigma may result from the essentialist-thinking related to these causes marking the person with a mental disorder as being “*categorically different*” to others, in possession of something inherently pathological, which may lead to a desire for social distance (Haslam & Kvaale, 2015, pp.400). The link between biogenetic explanations and perceptions of dangerousness is less theoretically developed; the authors note that essentialist thinking has been consistently associated with greater endorsement of social stereotypes, but also note that perceptions of controllability may also be related to perceptions of dangerousness (Haslam & Kvaale, 2015). However, this is challenged by findings by Yoshioka et al. (2016) in which perceived dangerousness was increased for biogenetic explanations but not for other uncontrollable, external causes such as trauma.

There is an interesting conceptual parallel between judgements of prognosis, such as those included in the Haslam and Kvaale (2015) study, and the causal dimension of perceived stability

contained within attribution theory (Weiner, 1980; Muschetto & Siegel, 2019). Both tap into perceptions of how enduring and long-term a mental illness is seen to be. Perceptions of permanence or endurance are in turn key elements of psychological essentialism (Haslam & Ernst, 2002). With this in mind, the relationship between biogenetic causal beliefs and poor prognosis found by Haslam and Kvaale (2015), are interesting in the context of the results found by Muschetto and Siegel (2019), in which perceived stability (i.e., duration) of depression predicts desired social distance and help-giving responses, mediated by emotion. Perceived stability and beliefs about prognosis are essentially the same thing; judgements about the duration of illness. It may thus be the case that the relationship between perceived stability and outcome variables such as help-giving may itself be influenced by whether a person endorses a particular kind of cause for mental illness.

Attribution theory thus far provides the most specific suggested explanations as to the underlying processes involved in the relationships between components of MHL, stigma and help-giving, describing a mediational process whereby beliefs influence behavioural intentions via emotion (Rudolph et al., 2004). However, essentialism may also play a role, and there may be conceptual overlap between the components of both approaches (e.g., perceived stability vs. prognosis). Both approaches are likely useful in structuring and interpreting the relationships between specific components of MHL (causal beliefs and beliefs about prognosis), the three main components of stigma (stereotypes, prejudice and discrimination), and help-giving intentions.

#### **4.4. Research Questions to Answer in The Present Study:**

It is proposed that when examining the relationship between MHL, stigma and help-giving for anxiety disorders in the present study, the analyses be split into two sections, described below:

##### *4.4.1. Exploring the relationships between MHL, stigma and help-giving intentions*

First, as anxiety disorders have largely been neglected in the literature in this area, it is suggested that exploratory analyses be conducted in line with those previously conducted for other disorders (see section 4.2), along with additional exploratory analyses, in order to determine whether the general trends found in the literature for other disorders also apply to anxiety disorders, and to investigate whether these relationships, if present, differ by anxiety disorder. Specific research questions, and hypotheses based on previous research where applicable, include:

Research Questions:

Help-giving intentions and help-giving efficacy towards people with anxiety disorders:

- What is the likelihood of participants offering help to hypothetical peers with anxiety disorders?
- How confident are participants in offering help to someone with an anxiety disorder?
- Do help-giving intentions and efficacy differ significantly across anxiety disorders and gender?

Relationships between components of MHL:

- Is ability to recognise anxiety disorders related to likelihood of suggesting particular types of help? Does this relationship vary by anxiety disorder?
- Are specific causal beliefs related to likelihood of suggesting particular types of help? Does this relationship vary by anxiety disorder?
- Are specific causal beliefs about anxiety disorders related to beliefs about prognosis?
- Other exploratory analyses examining the relationships between components of MHL:
- Does perceived impact of anxiety disorders differ according to ability to recognise anxiety disorders?
- Does level of concern toward vignette characters with anxiety disorders differ according to ability to recognise anxiety disorders?

- Do beliefs about prognosis for anxiety disorders differ depending on ability to recognise anxiety disorders?

Do perceptions of the need for help for anxiety disorders differ depending on recognition of anxiety disorders?

- Do causal beliefs about anxiety disorders differ depending on ability to recognise anxiety disorders?
- Is level of concern for those with anxiety disorders related to the perceived impact of symptoms on ability to manage in daily life?
- Is help-giving efficacy related to type of help suggested for anxiety disorders?

Relationships between components of MHL and stigma:

- Do participants differ on their level of stigma toward people with anxiety disorders based on their ability to recognise anxiety disorders? Does this relationship vary by anxiety disorder?
- Do specific causal beliefs relate to stereotype endorsement for anxiety disorders? (particularly the WNS and dangerousness stereotypes?)

Role of previous contact with a person with mental illness:

- Is previous experience of mental illness related to stigma toward clinical anxiety disorders?
- Is previous experience of mental illness related to help-giving intentions (likelihood of helping) for clinical anxiety disorders? (exploratory)

Hypotheses:

The following tentative hypotheses are proposed based on previous findings in the literature for a number of the above research questions:

- It is expected that recognition will most likely be associated with higher quality help-giving suggestions for anxiety disorders, based on studies involving depression (Jorm et al., 2005; Wright et al., 2007; Amarasuriya et al., 2017).
- It is expected that likelihood of suggesting particular type of help will be associated with belief in particular causes; for example, that belief in chemical imbalance as a cause will be associated with increased odds of suggesting professional help; this is based on limited studies on depression (Samouilhan & Seabi, 2010).
- Biologically-based causal beliefs have been associated with poorer estimations of prognosis (Haslam & Kvaale, 2015), so it is tentatively expected that this will be the case in the present study. Again, more research into the role of other causal beliefs is needed.
- It is expected based on previous research that WNS endorsement will be lower with biologically-based causes of anxiety (Reavley & Jorm, 2014). Previous research has shown that causal beliefs which are seen to be uncontrollable (i.e., biogenetic explanations) are associated with reduced WNS endorsement but higher perceptions of dangerousness (Haslam & Kvaale, 2015; Yoshioka et al., 2016). More research is needed into the relationship between other causal beliefs and these stereotypes. Endorsement of various psychosocial causes have been previously associated with both increased and decreased WNS endorsement (Reavley & Jorm, 2014; Yoshioka et al., 2016), so these analyses will be largely exploratory; as will analyses linking causal beliefs to other, understudied stereotypes.
- Previous contact with a person with mental illness has consistently been found to be associated with lower levels of stigma (Angermeyer & Matschinger, 1996b; Griffiths, Christensen & Jorm, 2008; Jorm & Oh, 2009; Batterham, Griffiths, Barney & Parsons, 2012; Yap et al., 2013; Dolphin & Hennessy, 2016), although this may be dependent on disorder, stigma component being measured, or age (Wang & Lai, 2008; Yap et al., 2013; Kaushik et al., 2016). It is thus tentatively expected that previous contact with a person with mental



illness will be associated with lower levels of stigma in the present study, although this may vary across stigma components and anxiety disorder.

#### *4.4.2. Accounting for the relationships between MHL, stigma, and help-giving intentions: Testing specific theory-driven mediation models*

After looking at how causal attributions relate to the WNS stereotype and beliefs about prognosis, it is suggested that separate mediation models be run, grounded in attribution theory and psychological essentialism, as discussed above (as per Haslam & Kvaale, 2015; Muschetto & Siegel, 2019), with the idea that the WNS stereotype will stand as a kind of proxy for perceived responsibility and prognosis as a measure of perceived stability. The following models will be run for each clinical anxiety disorder vignette, with anger, fear and pity as parallel mediators, and desired social distance as a sequential mediator (see Chapter 12 for full details).

- WNS > anger, fear, pity > desired social distance > help-giving intentions
- Prognosis > anger, fear, pity > desired social distance > help-giving intentions

It is expected that endorsement of the the WNS stereotype, acting as a proxy for perceived responsibility, will predicted decreased help-giving intentions via increased prejudice, and desire for social distance, in line with findings from attribution-theory driven studies, and elsewhere (Jorm & Oh, 2009; Dolphin & Hennessy, 2014; Reavley & Jorm, 2014; Muschetto & Siegel, 2019).

There is less research on the role of perceived stability/prognostic pessimism, although perceived stability of depression was found to predict less willingness to help, and increased desired social distance for depression, but only when the vignette character was described as a close other (Muschetto & Siegel, 2019). It is not clear whether the same pattern will be found for anxiety

disorders, especially as the sample in the present study are adolescents, and as such the perceived direct impact of duration of a friends' symptoms on participants may not be the same as for adult samples responding to a vignette about a close friend or family member. As such, this model is more exploratory in nature.

### 5.1. Introduction

This chapter details the methodological approach applied to the present study. It first provides information on the design and materials employed, followed by details on ethical approval, participant recruitment and demographics, and study procedure.

### 5.2. Design

The present study aims to assess MHL, stigma, and help-giving intentions, along with the relationship between these variables, across anxiety disorders in a sample of adolescents in Ireland (see chapters 2, 3, and 4 for specific research questions). The anxiety disorders to be examined in this study are generalised anxiety disorder, panic disorder, and social anxiety disorder. These particular anxiety disorders are among the most common mental illnesses in young people, often first emerge in adolescence, and significantly impact quality of life (Essau et al., 2000; Craske & Stein, 2016).

In order to address these aims, a cross-sectional, quasi-experimental within-subjects design was used. The within-subjects variable was anxiety disorder type, and the quasi-experimental variable was participant gender. Anxiety disorder type was varied via the presentation of clinical vignettes (see Measures section below) describing the three anxiety disorders as well as a non-clinical control scenario, situational stress, in order to examine whether participants differentiate between clinical and non-clinical situations.

Each vignette was followed by a questionnaire examining anxiety literacy, stigma, and help-giving intentions. This included a mixture of open-ended and Likert-scale questions, adapted and expanded from the literature (see Measures section below). Before reading the first vignette, participants completed a basic demographic questionnaire.

In order to control for any potential effects of the gender of the hypothetical peer, two versions of the measure were produced, one with all female vignette characters and one with all male characters (identical to the female version but with names and pronouns changed to reflect a male character). A copy of the survey measure, including the vignettes, as presented to participants is included in Appendix C.

### **5.3. Materials and Survey Development**

#### *5.3.1. Vignettes*

The study used brief vignettes in order to examine participants' mental health literacy, stigmatising responses, and help-giving responses toward a hypothetical peer displaying symptoms of clinical anxiety disorders. Vignettes are short scenarios or stories about individuals or situations (Leighton, 2010). Brief vignettes are frequently used in the MHL literature generally, and in adolescent MHL specifically (e.g. Jorm, 2000; Burns & Rapee, 2006; Cotton et al., 2006; Kelly et al., 2006; Wright et al., 2007; Leighton, 2010; Mason et al., 2015).

Vignettes have been noted as being a useful method for introducing sensitive topics or situations to participants without requiring previous knowledge or experience of the topic in question (Barter & Renold, 2000; Leighton, 2010). This makes them especially useful in the context of this study, as the research questions relate to how adolescents understand and respond to peers displaying symptoms of anxiety disorders, rather than their understanding and response to psychiatric labels.

Three clinical vignettes, depicting symptoms of GAD, panic disorder and social anxiety disorder, and a non-clinical control scenario (situational stress) were developed for use in the study (see Appendix C). The clinical vignettes were developed in accordance with the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) criteria for GAD, panic disorder and social anxiety disorder (APA, 2013). The non-clinical control (stress) vignette was written to describe a young person experiencing a stressful situation at home. Both male and female versions of the vignettes

were produced in order to control for any potential effects of the gender of the vignette character on responses (e.g. Paulus et al., 2015).

Criticism of vignettes have noted issues such as a lack of realism within the hypothetical scenarios presented, and issues with internal validity (Barter & Renold, 2000; Hughes & Huby, 2004). Gould (1996) argues that to ensure internal validity, vignette development should draw upon existing literature or case studies, that vignettes should be vetted by a panel of experts, and that vignettes should be pretested to identify any elements that need refining.

Vignettes in the present study were developed according to DSM-5 criteria, and underwent expert validation prior to the commencement of the study. They were sent to trainee clinical psychologists, who were asked to rate their accuracy on a 7-point scale in terms of their representation of the various clinical anxiety disorders. All vignettes received an average rating of 6 or higher, and trainees agreed that the control vignette was non-clinical in nature. Feedback from the trainees was used to inform the final vignettes. The vignettes were also pretested in a pilot study of 25 adolescents (see section on pilot study, below). In addition to the lack of existing clinical anxiety vignettes in the literature, another major reason for developing new vignettes for use in this study was to ensure the relevance and realism to the context of adolescence in Ireland.

### ***5.3.2. Survey Measure: Questionnaire Development and Measures Used***

The survey measure (see Appendix C) first includes a demographic questionnaire (questions 1-4), recording participants' age, gender, mother's highest level of completed education, and ethnicity. Mother's education is frequently used as a proxy measure for socioeconomic status, for example in the Growing Up in Ireland national longitudinal study (Williams et al., 2009). The items on mothers' education and ethnicity were based on those used in the Irish census form (Central Statistics Office (CSO), 2011; CSO, 2016). The main survey measure was developed through reviewing the

literature, identifying gaps in previous research, deciding which factors would be included in this study (as described in Chapters Two and Three) and collating existing measures of those factors, and where needed, developing new items for use in this study (see below).

### ***5.3.2.1. Pilot Study***

The survey was piloted in December 2017 to assess readability, ease of understanding, and time required to complete the measure. Twenty-five students (20 female, 5 male) in Transition Year (aged between 16 and 17 years) were recruited using convenience sampling from a secondary school in Leinster. The pilot study determined that the length of a standard secondary school class (40 minutes) was sufficient for students to complete the measure. Some survey items were refined or changed based on responses to the pilot study; these are detailed under the relevant survey development sections below.

Additionally, the pilot study included an extra open-ended question relating to anxiety stereotypes, with a view to expanding existing stereotype measures in the main study, if necessary. Responses to this question were analysed and are described in the stigma measure section below. Focus groups were also conducted for this purpose, however, unexpected time constraints on the day of data collection reduced the usefulness of this component and thus they are not included in the write-up.

### ***5.3.2.2. MHL measure***

The MHL items used in this study (see Appendix C) were largely taken or adapted from previous studies. These items have been developed with or are frequently used in child and adolescent populations (Burns & Rapee, 2006; Kelly & Jorm, 2007; Reavley & Jorm, 2014; Dolphin & Hennessy, 2016). They comprised a mixture of open-ended and Likert scale questions, and aimed to comprehensively capture the MHL construct. The individual components of MHL that were assessed are described below:

#### *5.3.2.2.1. Recognition of anxiety disorders*

Recognition of anxiety disorders was assessed by a question (Q1, Appendix C), taken from Dolphin & Hennessy (2016), which asks participants in an open-ended format what, if anything, they think is wrong with the vignette character. An open-ended question was used with a view to obtaining an ecologically valid picture of participants' recognition of anxiety disorders based on symptoms in their peers, while avoiding priming participants' answers by giving predetermined forced-choice options.

#### *5.3.2.2.2. Level of concern*

Participants' level of concern for the vignette character was assessed using a four-point Likert scale question (Q3, Appendix C) taken from Burns and Rapee's (2006) Friend in Need Questionnaire. Response options ranged from 1 ("I would not be at all worried about her emotional well-being") to 4 ("I would be extremely worried about her emotional well-being").

#### *5.3.2.2.3. Beliefs about prognosis*

Participants' beliefs about the prognosis of the vignette characters were assessed using a four-point Likert scale question (Q4, Appendix C) taken from Burns and Rapee's (2006) Friend in Need Questionnaire. Response options ranged from 1 ("one or two days") to 4 ("longer than a few months").

#### *5.3.2.2.4. Perceived need for help.*

Participants' perceptions of the need for help for vignette characters was assessed using a three-point Likert scale question (Q6, Appendix C), taken from Burns and Rapee's (2006) Friend in Need Questionnaire. The question "do you think X needs help from another person to cope with their problems?" had three responses; 1 (yes). 2 (no), and 3 (don't know).

#### 5.3.2.2.5. *Perceived impact of anxiety disorders*

A scale item relating to the vignette character's ability to manage in daily life (Q2, Appendix C) was added by the researcher with the aim of assessing whether participants recognise the burden of anxiety disorders on everyday functioning. This item also used a four-point scale, in keeping with the Burns and Rapee (2006) items. Response options ranged from 1 ("I think X manages extremely well in their day to day life") to 4 ("I think X has a lot of trouble managing").

#### 5.3.2.2.6. *Beliefs about causality*

The version of the survey measure used in the pilot study included an open-ended causality question ("*what do you think is the underlying cause of X's problems?*"), in contrast with the scale version used in the main study survey measure. However, the responses given to this open-ended question in the pilot suggested that for some respondents, the question was not tapping into the desired construct, with participants frequently labelling the problem or symptoms, i.e., the immediate issue, rather than considering the **underlying** cause. As the researcher was interested in participants' endorsement of specific causes (e.g., chemical imbalance, personality, mental illness), and the relationship between endorsement of these specific causes and other components of MHL (e.g., type of help suggested), and stigma, it was decided that scale items measuring participants' endorsement of specific causes be used instead.

Therefore, in the main study, participants' beliefs about the causes of clinical anxiety disorders were assessed by a series of Likert-scale items measuring their endorsement of specific causes (Q5, Appendix C). This question asks participants to rate their agreement, on a five-point scale, to statements about a range of different potential causes (e.g. "X feels like this because of everyday stresses"). The causality measure used in the main study was loosely adapted from Reavley and Jorm (2014). Reavley and Jorm (2014) asked participants about various different causes (trauma, heredity, etc.), and these causality items were used as the basis for the causality question in the



present study, however, the wording was changed to make it more appropriate for adolescents, and some items were merged or omitted when judged not relevant or redundant (e.g., items suggesting a viral or allergic cause). Finally, three additional causes were included based on the open-ended causality question included in the pilot study; personality, overthinking, and a physical medical problem.

#### *5.3.2.2.7. Help-giving suggestions*

Participants' knowledge of appropriate help-giving actions (i.e., mental health first aid) for anxiety disorders was assessed using an open-ended item (Q8, Appendix C), taken from Kelly and Jorm (2007). Participants could list up to four actions they would take to help the vignette character. The help-giving measure was changed from that used in the pilot survey measure; originally, the measure included multiple separate open-ended help-giving questions relating to what the person should do to help themselves, where/from whom they should obtain help, how the participants would help the person, et cetera, adapted from Byrne et al. (2015). However, based on the pilot study, these multiple open-ended measures were deemed too long, especially considering that participants would be answering them four times, once for each vignette. They would also pose a logistical challenge for analysis. As such, it was decided that the Kelly and Jorm (2007) open-ended item would be more concise, while still more ecologically valid than forced-choice questions; this was important as it was the aim of the study to explore what participants themselves would do to help, if they had a friend like one of those described in the vignettes. This item has the potential to measure both mental health first aid responses and examine participants' knowledge and awareness of formal sources of help.

#### *5.3.2.2.8. Help-giving efficacy*

Self-efficacy relates to a person's perceived capability of producing a particular outcome, and usually includes items which measure participants' confidence in achieving that outcome on a scale (Heslin & Klehe, 2006). Participants' level of confidence in giving help to the vignette characters was assessed using a five-point Likert scale item (Q9, Appendix C), taken from Kelly and Jorm (2007). Participants were asked "how confident would you be in offering help with X's problem?". Response options ranged from 1 ("I would not try to help, I would probably make things worse") to 5 ("very confident I could help").

### ***5.3.2.3. Help-giving intentions***

Participants' help-giving intentions toward vignette characters were assessed using a Likert scale question (Q7, Appendix C), which asked participants to rate the likelihood that they would help the person in the vignette with their problems on a five-point scale, ranging from very unlikely to very likely. This item was not taken from a particular study, but is loosely based on help-giving questions included in other studies (e.g. Byrne, Swords & Nixon, 2015; Cavallo, Zee & Higgins, 2016).

### ***5.3.2.4. Stigma measure***

The stigma measure is in three parts; assessing the three components of stigma, stereotypes, prejudice, and discrimination.

#### ***5.3.2.4.1. Stereotypes***

Participants' endorsement of negative stereotypes toward those with clinical anxiety disorders were measured by asking participants to rate their agreement, on a five-point scale (from 1, "strongly disagree", to 5, "strongly agree"), with 17 items relating to six different stereotypes. The first, the weak-not-sick stereotype, is measured using a three-item subscale (Q10a-c, Appendix C), taken from Griffiths et al (2004) Personal Depression Stigma Scale. While some studies using the Griffiths et al (2004) scale include an additional item in the WNS subscale (some version of the item "it is best to avoid X so that you don't develop this problem yourself", see for example Reavley and

Jorm (2014), and Yap et al. (2011)), it was decided that in the present study the WNS items would be limited to the three items directly relating to perceptions of mental illness as personal weakness (the person could snap out of it if they wanted, personal weakness, not a real medical illness). This is in line with the findings of a study by Amarasuriya et al. (2015), which found that the weak not sick construct was very clearly defined by the three items relating directly to personal weakness, while the avoidance item did not load heavily onto the WNS factor. The Personal Depression Stigma scale as a whole has been reported to have moderate to high internal consistency, with a Cronbach's alpha of between 0.7 and 0.82, as reported by Calear, Griffiths and Christensen (2011), and Griffiths, Christensen and Jorm (2008), but internal consistency values for the individual subscales have not been outlined in previous studies.

The dangerousness stereotype was measured using a five-item subscale (Q10d-h, Appendix C), adapted from scales used by Angermeyer and Matschinger (2003). The dependency stereotype was measured using a three-item subscale (Q10i-k, Appendix C), also based on scales used by Angermeyer and Matschinger (2003). The direction of scoring on the dangerousness and dependency stereotypes were changed to match that of Griffiths et al (2004), as were the response options (changed from "definitely true" to "strongly agree" etc.). This was done in order to have a coherent, consistent measure of stereotypes. There are no available internal consistency ratings for the dangerousness and dependency subscales in the literature. The dangerousness and dependency subscales were previously validated using factor analysis (Angermeyer & Matschinger, 2003).

The weak-not-sick, dangerousness and dependency stereotypes are now standard in the literature and are frequently included in measures of mental illness stigma (Angermeyer & Matschinger, 2003; Reavley & Jorm, 2014; Yap et al., 2011; Yap et al., 2014). However, as discussed in Chapter 3, the majority of the mental illness stereotype measures were developed in the context of other disorders, such as depression or psychosis. The implications of this include the chance that these

stereotypes may not be entirely relevant to anxiety disorders (which has been borne out in research, particularly with regard to the dangerousness stereotype (Reavley & Jorm, 2011c; Reavley & Jorm, 2011d; Yoshioka et al., 2014), as well as the chance that these limited stereotype measures are failing to capture stereotypes which may be unique to, or more frequently endorsed for, anxiety disorders. For this reason, the pilot study for this research also included an open-ended question (*“What words (and phrases) do you think most people would use to describe someone like X?”*), in order to capture stereotypes which may have been missed by existing measures, with a view toward improving the relevance of the survey measure for anxiety disorders in the main study.

Responses to this open-ended question for each vignette (including situational stress) were analysed using thematic analysis as per Braun and Clarke (2006) in order to capture a rich overall description of the entire data set. The results of this analysis were published and are described fully in Hanlon and Swords (2019; see Appendix A), but are summarised below.

Thematic analysis resulted in three major overarching subthemes relating to participants’ perceptions and conceptualisations of vignette characters with clinical anxiety disorders: Socially Abnormal, Blame and Dismissiveness, and Clinical vs. Non-clinical Conceptualisations. Theme One, Socially Abnormal, relates to negative conceptualisations of people with clinical anxiety disorders with regard to their social functioning, and was composed of three subthemes; “not like me” (in which those with anxiety disorders were marked as different, “freaky”, “odd”, or “strange”), “not good company” (in which those with anxiety disorders were seen as being “bitchy” “rude”, “awkward, closed-off” and “never comes anywhere”), and “wallflower” (in which those with anxiety disorders were seen as prototypical “wallflowers” rather than as having a clinical illness, described as “shy”, “insecure”, and “embarrassed easily”).

Theme Two, Blame and Dismissiveness, describes perceptions which imply that the symptoms experienced by those with clinical anxiety disorders are their own fault, or which otherwise

minimise the severity or distress caused by the symptoms; referring to the person as “dramatic”, an “attention-seeker”, or a “person who over-exaggerates”. Implicit blame was present throughout this theme, with the vignette characters labelled as “weak”, “lazy” and a “coward for not pushing through it”. This theme was present in the responses to both the clinical and control vignettes.

Finally, Theme Three, Clinical vs Non-clinical Conceptualisations, describe responses that frame the vignette character in terms of the symptoms they are experiencing. A small minority of responses under this theme clinical terms, such as “anxiety” or “mental health issues”, while a major subtheme under this theme was that of “naming feelings”, where participants responded that characters may be labelled using common, colloquial language describing the feelings they are experiencing; “anxious”, “nervous”, “upset” et cetera. This theme points to the experience of clinical anxiety disorders being conceptualised as a transient emotional state, rather than a mental illness. This is particularly evident by the high frequency of responses under this theme describing the clinically anxious vignette characters as being “stressed”.

To summarise, participants marked the clinically anxious vignette characters as being socially abnormal, while simultaneously minimising their distress and blaming them for their symptoms. The results support previous research which has shown the weak-not-sick stereotype to be more prominent in social anxiety disorder (Reavley & Jorm, 2011c; Reavley & Jorm, 2011d), and added new social stereotypes not seen in previous research.

These results led to the subsequent inclusion of additional stereotype items unique to this study. As only the first two themes (Socially Abnormal, and Blame and Dismissiveness) were relevant to stereotypes (as Theme Three namely related to participants naming symptoms and feelings), it was decided that additional stereotype subscales based on these themes be included in the measure. First, two subscales were added based on the most prominent subthemes of Theme One; “not like me” and “not good company”. Second, one subscale was added based on Theme Two, Blame and Dismissiveness. As many of the responses under this theme were covered by the existing WNS

subscale, the additional subscale focused on perceptions of attention-seeking or of the person being dramatic. Each of the three additional subscales was composed of two items drawn from participants' most common responses under each of the relevant themes. These additional subscales are not intended to be rigorous psychometric instruments, but rather are exploratory tools aimed at an initial examination of novel stereotypes relating to anxiety disorders.

Specifically, a two-item subscale (Q10l-m, Appendix C) was added to assess whether participants perceive those with clinical anxiety disorders as being odd or strange (i.e., different from themselves), while another two-item subscale (Q10n-o, Appendix C) was added to assess whether participants feel that those with anxiety disorders are bad company. Finally, a two-item subscale (Q10p-q, Appendix C) was added to capture participants' perceptions of those with anxiety disorders as being attention-seeking, to supplement the weak-not-sick subscale.

Reliability analyses were conducted on the main study dataset for each of the subscales within the stereotype measure; Cronbach's alpha for subscales with three or more items, and the Spearman-Brown coefficient for those with two items, as per Eisinga, Grotenhuis and Pelzer (2013).

Internal consistency (Cronbach's alpha) for the clinical subscales with three or more items ranged from 0.6-0.87 for all subscales across the clinical vignettes, indicating that all but one subscale had good internal reliability, with one (dependency, GAD, 0.61) just below the recommended threshold. Pearson's correlations were used as an approximate measure of reliability for the two-item stereotype subscales. Correlations for these subscales (strange, bad company and attention-seeking) ranged from 0.37 to 0.83 across vignettes, indicating low-moderate to high correlations (see Table 5.1 below).

Table 5.1. Internal consistency of stereotype subscales

Stereotype subscales	Vignette			
	GAD	Panic disorder	SAD	Stress
<b>Weak-not-sick</b>	Cronbach's alpha: 0.67	Cronbach's alpha: 0.75	Cronbach's alpha: 0.78	Cronbach's alpha: 0.51
<b>Dangerousness</b>	Cronbach's alpha: 0.72	Cronbach's alpha: 0.78	Cronbach's alpha: 0.84	Cronbach's alpha: 0.85
<b>Dependency</b>	Cronbach's alpha: 0.61	Cronbach's alpha: 0.70	Cronbach's alpha: 0.71	Cronbach's alpha: 0.71
<b>Odd/strange</b>	r=0.37	r=0.45	r=0.54	r=0.44

<b>Bad company</b>	r=0.76	r=0.76	r=0.83	r=0.66
<b>Attention-seeking</b>	r=0.54	r=0.65	r=0.69	r=0.62

#### 5.3.2.4.2. Prejudice

Participants' prejudice toward vignette characters was assessed using an emotional ratings scale (Q11, Appendix C) adapted from Angermeyer and Matschinger (2003). Composed of nine items, the prejudice scale comprises three subscales, relating to anger (items 11a-c), pity (items 11d-f) and fear (items 11g-i). Participants rate their agreement on a five-point scale, to statements such as "X's behaviour makes me feel angry". As with the stereotype measures adapted from Angermeyer and Matschinger (2003) above, the scale headings were changed from "definitely the case" to "strongly agree" for consistency. The pity subscale is reverse scored. Again, the authors did not include a measure of internal consistency for this scale. The scale was previously validated by factor analysis (Angermeyer & Matschinger, 2003).

Internal consistency (Cronbach's alpha) for the anger and fear subscales in the present study ranged from 0.68-0.88 across all vignettes, indicating acceptable to good internal consistency (see Table 5.2 below). Internal consistency was lower for the pity subscale, ranging from 0.37-0.6 across the clinical vignettes. An examination of the inter-item correlations showed low correlations between the sympathy item "X's behaviour makes me feel sorry for them" and the other two items, particularly for the GAD vignette. However, this item is a key component of the pity subscale, and removal would only bring the alpha level up to acceptable for one vignette. For this reason, and because the average inter-item correlations for the pity subscale across vignettes were acceptable (between 0.2 and 0.4) as per Briggs and Creek (1986), it was decided that the pity subscale be retained as is, but that caution be employed when drawing conclusions about results involving the pity subscale.

Table 5.2. Internal consistency of the prejudice subscales

Prejudice subscales	Vignette			
	GAD	Panic disorder	SAD	Stress
<b>Anger</b>	Cronbach's alpha: 0.68	Cronbach's alpha: 0.88	Cronbach's alpha: 0.81	Cronbach's alpha: 0.83
<b>Pity</b>	Cronbach's alpha: 0.37	Cronbach's alpha: 0.40	Cronbach's alpha: 0.60	Cronbach's alpha: 0.49
<b>Fear</b>	Cronbach's alpha: 0.75	Cronbach's alpha: 0.76	Cronbach's alpha: 0.87	Cronbach's alpha: 0.83

#### 5.3.2.4.3. Discrimination

Participants' discrimination toward vignette characters, in the form of desired social distance, was measured using a six-item social distance scale (Q12, Appendix C), developed by Kelly and Jorm (2007) for use with adolescents, in which participants rate their willingness on a four-point scale to engage in various activities with the vignette character. Internal consistency for the scale has previously been reported as 0.9 (Kelly & Jorm, 2007). Desired social distance is an established proxy measure for behavioural discrimination in survey-based stigma research (Corrigan et al., 2001).

Internal consistency for the social distance scale in the present study was high for all vignettes, with a Cronbach's alpha of greater than 0.8 in all cases (see Table 5.3 below).

Table 5.3. Internal consistency of the desired social distance scale

Desired social distance scale	Vignette			
	GAD	Panic disorder	SAD	Stress
	Cronbach's alpha: 0.85	Cronbach's alpha: 0.87	Cronbach's alpha: 0.91	Cronbach's alpha: 0.86

#### 5.3.2.5. Previous contact with a person with mental illness

Participants' previous contact with a person with mental illness was measured using a single item at the end of the questionnaire, asking if they, or anyone close to them, had ever experienced a mental illness.



### 5.3.3. *Other Materials*

- Recruitment materials (letters and emails sent to schools) [Appendix D]
- Parental information and consent form [Appendix E]
- Participant information and consent form [Appendix F]
- Participant debriefing sheet [Appendix G]

## 5.4. Ethical Approval

Ethical approval was given by the Trinity College School of Psychology Ethics Committee for the pilot study on 18<sup>th</sup> April 2017, and for the main phase of data collection on 16<sup>th</sup> November 2018;

**Approval ID: SPREC042018-1.** [see Appendix H for a copy of the ethical approval letter].

## 5.5. Recruitment and Participants

### 5.5.1. Recruitment

A mixture of purposive and convenience sampling was used to recruit participants; secondary school students currently in the senior cycle phase of school (transition year and older). As anxiety disorders typically increase in prevalence from mid-late adolescence (Beesdo-Baum and Knappe, 2012), the study focused on older adolescents. The study aimed for a sample size of 250 participants; power analyses using the G\*Power tool (Faul, Erdfelder, Lang & Buchner, 2007) using an 0.80 power level, 0.05  $p$ -value, and medium effect size (e.g.;  $d=0.4$  for an independent-samples  $t$ -test with two groups,  $w=0.3$  for a chi-squared test with 2x2 contingency table,  $f=0.25$  for a repeated-measures ANOVA with four conditions,  $f^2=0.15$  for a linear multiple regression with nine predictors) suggested a minimum required total sample size of 200 participants; 250 was set as the desired sample size to allow for incomplete surveys.

Initially, in the first part of the recruitment phase (April 2018-October 2018), working from the Department of Education list of post-primary schools in Ireland, 70 schools throughout Leinster were contacted via either postal letter or email (see Appendix D), then by follow-up phone-call, to inform the schools about the purpose of the study and to assess levels of interest. This method ultimately resulted in two schools agreeing to participate in the study, with numbers far below the desired sample size of 250 that was decided a priori.

There were a number of issues encountered during the recruitment phase. First, there was significant difficulty in progressing past the initial point of contact with schools, usually school secretaries, who act as gate-keepers to teachers and principals. In the majority of cases, secretaries agreed to pass on the information, but ultimately, no further response was given from their schools. In the case of the two schools (sampled purposively) who agreed to participate, the first point of contact was the school guidance counsellor, as these schools provided public contact information for them on the school website. Second, a number of schools expressed interest, before dropping out due to time constraints or in some cases, simply ceasing contact with the researcher with no explanation given. Additionally, the nature of schools as busy and highly-scheduled environments meant that giving up a full class period in order to participate was not possible for many of the schools in question. Exam periods (particularly an issue for senior cycle students) and school holidays limiting the amount of term time available for students to participate was another major issue, in addition to the necessity of finding a suitable free period for students to take part. This slowed the pace of the recruitment phase markedly. Finally, the necessity of obtaining parental consent resulted in large numbers of students who otherwise wished to participate being unable to do so due to forgetting to return the consent form on time. This led to the number of participants on multiple data collection days being smaller than expected.

These issues and challenges in recruiting research participants from schools have been previously documented in the literature. Establishing appropriate contacts within the schools, navigating the multiple levels of contact involved (secretaries, teachers, principals, parents etc.), difficulties with logistics around suitable time periods for data collection in a context which is already highly scheduled are all documented challenges of conducting research in this setting, and it is noted that the process from initial contact to data collection can take many months (Bartlett et al., 2017). The required use of opt-in parental consent is also a recognised challenge in recruiting participants from school settings; whether by outright parental refusal to consent, or issues caused by the lack of direct access to parents (Coyne, 2010; Bartlett et al., 2017) and subsequent dependence on a

third party (teachers) as well as the participants themselves in order to obtain and return parental consent forms on time.

Based on the literature, ongoing difficulties in recruitment, and discussions with my supervisor and other PhD candidates who had experience conducting research in school settings, it became apparent that securing school engagement solely through the staged recruitment strategy outlined above (emails and letters, followed up by phone calls) would likely not result in sufficient participant numbers for the study. As such, convenience sampling was then used to supplement the recruitment strategy outlined above. This was done both in parallel to, and following the first data collection phase, beginning in September 2018 and continuing through April 2019. Through personal or secondary contacts working as secondary school teachers, three additional schools agreed to participate. At the proposed end of the data collection phase, in May 2019, a final push for participants was conducted by contacting summer camps and youth groups for senior cycle-aged students in Leinster via email. One summer youth programme agreed to take part, and data collection was completed in July 2019.

School characteristics are detailed in Table 5.4 below.

Table 5.4. School & Youth Group Characteristics

<i>School</i>	<b>No. of Participants</b>	<b>Location</b>	<b>DEIS Status</b>
<i>A</i>	33	Kildare	Yes
<i>B</i>	17	Kildare	No
<i>C</i>	16	Kildare	No
<i>D</i>	88	Dublin	No
<i>E</i>	83	Dublin City	Yes
<b>Youth Group</b>	<b>No. of Participants</b>	<b>Location</b>	
<i>F</i>	5	Dublin City	

Participants were evenly distributed between DEIS (n=116) and non-DEIS (n=121) schools. DEIS status refers to schools with higher levels of educational disadvantage as identified by the Delivering Equality of Opportunity in Schools initiative by the Department of Education and Skills (Department of Education and Skills, 2017). The location of schools varied from inner-city to suburban locations, as well as one inner-city summer programme.

### 5.5.2. Participants

Two hundred and forty-two secondary school students ranging in age from 15 to 19 years (mean=16.5 years, SD=0.8) took part in the study. This figure is just above the minimum required sample size of 200 as estimated by power analyses (see section 5.5.1 above). Seventy-four students reported their gender as male, 165 as female, with 3 students identifying as another gender (fluid, genderfluid, and prefer not to say).

The majority of participants (n=147, 60.7%) identified as White Irish, 39 participants (16.1%) identified as being from any other white background, 14 (5.8%) as Black Irish, 7 (2.9%) as African, and 4 (1.7%) as Irish Traveller (see Table 5.5 below). Over half of participants (n=140, 57.9%) indicated that they, or someone close to them had experienced a mental illness, while 41 indicated they had not (16.9%). Sixty-one participants (25.2%) did not respond to this question.

Table 5.5. Participant Demographics

	<b>Age</b>	<b>Frequency</b>	<b>Percentage of Sample</b>
	<i>15 years</i>	33	13.6%
	<i>16 years</i>	75	31%
	<i>17 years</i>	120	49.6%
	<i>18 years</i>	11	4.5%
	<i>19 years</i>	2	0.8%
	<i>Missing</i>	1	0.4%
	<i>Total</i>	242	100%
	<b>Ethnic Background</b>	<b>Frequency</b>	<b>Percentage of Sample</b>
	<i>White Irish</i>	147	60.7%
	<i>Any other White background</i>	39	16.1%
	<i>Black Irish</i>	14	5.8%
	<i>African</i>	7	2.9%
	<i>Irish Traveller</i>	4	1.7%
	<i>Chinese</i>	2	0.8%
	<i>Any other Asian background</i>	11	4.5%

<i>Other (including mixed background)</i>	15	6.2%
<i>Missing</i>	3	1.2%
<i>Total</i>	242	100%

## 5.6. Procedure

Once a school agreed to participate in the study, a signed letter from the Principal of each school was obtained and sent on to the School of Psychology Research Ethics Committee prior to beginning data collection. In all schools, a single teacher was established as the main point of contact once each school had agreed to participate.

Parental information and consent forms (see Appendix E) were sent to each school approximately two weeks prior to the day of data collection and distributed by the participating teacher. Once parental consent forms had been returned to the school, a date was set for data collection.

The researcher was present for data collection in all schools. Participants were first given an information sheet about the study before signing a participant consent form (see Appendix F). Participants were told both verbally and in the information sheet that they were free to stop participating in the study at any time. Both the parental and participant consent forms described the study in general terms, referring to “young people’s understanding of mental health and wellbeing”, in order to avoid priming participants about the specific focus of the study, i.e. anxiety disorders.

Once informed consent was obtained, participants proceeded to complete the survey measure, reading each vignette and answering the corresponding questions. Vignette gender was alternated for each participant.

The researcher remained present throughout the session to answer any queries or clarify any issues raised by students. Students were free to stop or take a break at any time during the session.

After completing the study, students were then debriefed verbally and via a paper debriefing sheet (see Appendix G). Each session lasted no longer than 40 minutes, the length of a standard class period.

### **5.7. Analysis: Overview**

The data were analysed using IBM SPSS Statistics version 25. Full details of all analyses performed on the data, including testing of assumptions for specific analyses, are outlined in full in the relevant chapters as signposted below.

Descriptive and frequencies analyses were performed on the MHL (see Chapter Six for details), stigma (see Chapter Eight) and help-giving intentions and help-giving efficacy (see Chapter Ten) items. The open-ended questions on labelling anxiety disorders, and help-giving suggestions in the MHL measure were analysed using a basic content analysis (see Chapter Six).

Comparisons of responses to the MHL (see Chapter Six), stigma (see Chapter Eight) and help-giving intentions and help-giving efficacy (see Chapter Ten) items across vignette condition were conducted using repeated-measures ANOVAs and McNemar tests.

Gender differences in MHL (see Chapter Six), stigma (see Chapter Eight) and help-giving intentions and help-giving efficacy (see Chapter Ten) were examined using independent-samples t-tests, chi-squared tests, and Mann-Whitney U tests.

The relationships between components of MHL, stigma and help-giving intentions were explored using linear regression, chi-squared tests, binary logistic regression, multiple linear regression, independent-samples t-tests and Mann-Whitney U tests (see Chapter Ten for full details). In order to facilitate the use of regression analyses in examining the relationship between participants' causal beliefs about anxiety disorders and other items, a principal components analysis was conducted on the causal belief items for each vignette, to reduce the number of causality items to

be entered into regression analyses and to simplify interpretation of results (see Chapter Ten, for full details).

Finally, specific theory-driven mediation models examining the relationships between MHL, stigma, and help-giving intentions were conducted using Hayes' (2017) PROCESS macro (version 3.2) for SPSS statistics version 25 (see Chapter Twelve for full details).

## **5.8. Conclusion**

Mental health literacy, stigma, and help-giving responses across three anxiety disorders and a non-clinical control scenario (situational stress) were measured in a sample of 242 senior-cycle students in Ireland. The following chapters will describe MHL, stigma and help-giving responses in the sample, as well as examining the relationships between these components.



## **Chapter 6: Adolescent Anxiety Literacy: Results from the Present Study**

### **6.1 Introduction**

This chapter aims to provide an overview of adolescents' understanding of clinical anxiety disorders by presenting the results of analyses examining recognition, perceived burden on daily life, level of concern, prognosis, beliefs about causality, perceived need for help, and knowledge of appropriate help for three anxiety disorders (GAD, panic disorder and social anxiety disorder) and a non-clinical control (situational stress). The chapter will also outline results of analyses conducted to ascertain whether key components of MHL vary significantly depending on anxiety disorder.

### **6.2 Can adolescents correctly recognise GAD, panic disorder, and social anxiety disorder?**

Responses to the open-ended question "What, if anything, do you think is wrong with [character]?" requiring participants to label the problem for the three clinical anxiety vignettes, and the non-clinical control, were analysed using a basic qualitative content analysis (Neuendorf & Kumar, 2015). The data for each vignette were read through in full, and inductively coded into nine label categories; nothing (nothing is wrong with the person), don't know/left blank, physical illness, stress/situational problem, non-clinical emotional problem (worried, upset, nervous, self-conscious, thinking too much etc.), other mental illness (e.g. depression/ADHD), anxious/anxiety, anxiety disorder, and correct specific label.

Responses mentioning "anxious" and "anxiety" were grouped together as it was impossible to definitively separate them with regard to perceived intended meaning of the participants.

Although "anxious" is frequently used conversationally in a non-clinical sense to describe an emotional state, similarly to the use of terms such as "worried", it was felt that it should be coded separately to the non-clinical emotional problem category, due to the conceptual difficulty in justifying differently interpreting "anxious" and "anxiety". "Anxiety" is often used as shorthand for

anxiety disorders, but it is also descriptor of a temporary emotional state; i.e., that of being anxious. For this reason, “anxious” and “anxiety” responses were coded together, and responses labelling the problem as “anxiety disorder” were coded separately.

If a respondent offered two potential labels (e.g., “she could be stressed or it could be anxiety”) the response was coded according to the most accurate label given, so if a participant mentioned anxiety along with another, incorrect or irrelevant label, the response was still coded as “anxious/anxiety”, as there was a level of recognition given in the response.

Responses were coded as being a correct specific label if they mentioned general anxiety, GAD, generalised anxiety disorder, or similar for GAD, panic disorder or panic attacks for panic disorder, and social anxiety or social anxiety disorder for social anxiety disorder. The criteria aimed to include responses which indicated that participants had a level of recognition for the specific anxiety disorder being described. The correct label was non-applicable to the non-clinical vignette depicting stress.

A breakdown of the pattern of labelling responses for each clinical vignette is provided below.

The nine detailed label categories were then condensed into three broader categories for the purpose of further quantitative analyses to be described in later chapters; correct specific label, mentions anxiety, and incorrect/other (see Table 6.1 below). Frequencies and percentages for each label category and broader grouping category are also shown in table 6.1.

Table 6.1. Frequencies and percentages of labels for each vignette, in response to the question “What, if anything, do you think is wrong with [character]?”

<i>Category</i>	<i>Code</i>	GAD	PANIC	SAD
<i>Correct Specific Label</i>	Correct specific label	0 (0%)	93 (38.4%)	34 (14%)
	<b>CATEGORY TOTAL</b>	<b>0 (0%)</b>	<b>93 (38.4%)</b>	<b>34 (14%)</b>
<i>Mentions Anxiety</i>	Anxious/Anxiety	105 (43.4%)	50 (20.7%)	63 (26%)
	Anxiety Disorder	2 (0.8%)	2 (0.8%)	0 (0%)
	<b>CATEGORY TOTAL</b>	<b>107 (44.2%)</b>	<b>52 (21.5%)</b>	<b>63 (26%)</b>
	Nothing is wrong	1 (0.4%)	2 (0.8%)	5 (2.1%)
	Don't know/Blank	9 (3.7%)	33 (13.6%)	42 (17.4%)

<i>Incorrect/Other</i>	Physical illness	0 (0%)	29 (12%)	0 (0%)
	Stress/situational problem	60 (24.8%)	3 (1.2%)	1 (0.4%)
	Non-clinical emotional problem	54 (22.3%)	22 (9.1%)	94 (38.8%)
	Other mental illness	11 (4.5%)	8 (3.3%)	3 (1.2%)
	<b>CATEGORY TOTAL</b>	<b>135 (55.7%)</b>	<b>97 (40%)</b>	<b>145 (59.9%)</b>
	TOTAL	242 (100%)	242 (100%)	242 (100%)

Label categories, frequencies and percentages for the control vignette, situational stress are outlined in Table 6.2 below.

Table 6.2. Label categories, frequencies and percentages for the control vignette (situational stress)

<i>Code</i>	STRESS
<i>Anxious/Anxiety</i>	23 (9.5%)
<i>Anxiety Disorder</i>	0 (0%)
<i>Nothing is wrong</i>	40 (16.5%)
<i>Don't know/Blank</i>	15 (6.2%)
<i>Physical illness</i>	0 (0%)
<i>Stress/situational problem</i>	87 (36%)
<i>Non-clinical emotional problem</i>	73 (30.2%)
<i>Other mental illness</i>	4 (1.7%)
<i>TOTAL</i>	242 (100%)

### 6.2.1 Participants' recognition of GAD

"Anxious/Anxiety" was the most frequently given label for GAD, with 43.4% of participants labelling GAD as such. However, just under a quarter of participants (24.8%) labelled GAD as being stress, or a situational problem (i.e. either explicitly labelling the problem as stress, or referring to situational problems such as exams or financial trouble). Similarly, 22.3% of participants labelled the problem in non-clinical language (e.g. "nervous", "worrying about little things", "overthinking"). No participants correctly labelled the problem as being GAD. Two participants (0.8%) labelled the problem as being an "anxiety disorder".

### *6.2.2 Participants' recognition of Stress*

Over a third of participants (36%) labelled the stress vignette as “stress/situational problem”, with 30.2% labelling the problem in non-clinical language, and a further 16.5% saying that nothing was wrong with the person, or that their feelings were normal given the situation (e.g. “Nothing is wrong with Mark, he is clearly worried which is natural in this situation”). Only one in ten responses (9.5%) labelling the stress vignette were coded as “anxious/anxiety”.

### *6.2.3 Participants' recognition of Panic Disorder*

Over a third of participants (38.4%) correctly labelled panic disorder (i.e. referred to “panic disorder” “panic attacks” or “anxiety attacks”). A further 20.7% and 0.8% of responses fell into the “anxious/anxiety” and “anxiety disorder” categories, respectively. Notably, over one in ten participants (12%) labelled panic disorder as being a physical medical problem (e.g. “he’s having a heart problem”, “Mark could have a serious medical condition”). Only three participants (1.2%) labelled the symptoms in the panic disorder vignette as being stress.

### *6.2.4 Participants' recognition of Social Anxiety Disorder*

The most frequent code for responses labelling the symptoms of social anxiety disorder was “non-clinical emotional problem”. The content of responses in this category were somewhat different to those given in the same code for GAD. Whereas responses under this code for GAD were phrased in terms of “worried”, “nervous” etc., for social anxiety disorder, responses such as “he lacks self-confidence”, “she’s an introvert”, “she lacks control over herself” and “he seems to be very shy and reserved” were common. Just over a quarter of responses (26%) labelling the symptoms of social anxiety disorder were coded as “anxious/anxiety”. Only 14% of participants correctly labelled the symptoms (i.e. they mentioned “social anxiety” or “social anxiety disorder”).

### 6.2.5 Do levels of recognition vary significantly across anxiety disorders?

To facilitate comparisons of recognition across vignettes, using a test suitable for repeated-measures comparisons with a categorical dependent variable (i.e. the McNemar test, which requires a dichotomous dependent variable), the three broad recognition categories were condensed into two categories. Specifically, the “correct specific label” and “mentions anxiety” categories were merged. This resulted in two categories, “incorrect” and “mentions anxiety or correct specific label”.

McNemar tests were then used to compare the proportions of Incorrect and Mentions Anxiety/Correct responses across vignettes. The analyses showed a statistically significant difference in proportions of participants’ recognition between GAD and panic disorder ( $p < 0.00$ ) and between SAD and panic disorder ( $p < 0.00$ ). In both cases, there was a higher proportion of responses in the “Mentions Anxiety/Correct Specific Label” for panic disorder than for either GAD or SAD. No significant differences in recognition were found between GAD and SAD.

Descriptive statistics (frequencies and percentages) of recognition across disorders are outlined in table 6.3 below.

Table 6.3. Recognition of GAD, panic disorder and SAD (Frequency (percentage))

	GAD	PANIC	SAD
<i>Incorrect</i>	135 (56%)	97 (40%)	145 (60%)
<i>Mentions Anxiety/Correct Specific Label</i>	107 (44%)	145 (60%)	97 (40%)

### 6.3.1 What is the perceived impact of GAD, panic disorder, and SAD on daily life?

A third of participants (34.3%) reported that the character with GAD had a lot of trouble managing in their day-to-day life, with a further 55% indicating that the character had at least some trouble managing (see table 2 below). Only 1.7% of participants felt that the character with GAD managed extremely well in day-to-day life, with 7.9% indicating that the character managed somewhat well. Almost half of participants (45%) felt that the character with panic disorder had a lot of trouble managing, and another 34.3% felt they had some trouble managing. Under 1% of participants responded that the character with panic disorder could manage extremely well in daily life, with just under 15% responding that the character could manage somewhat well.

A majority of participants also felt that the character with social anxiety disorder had some (39.7%) or a lot of trouble (35.1%) managing. In contrast, for the stress vignette, the majority of participants responded that the character could either manage somewhat (47.5%) or extremely well (16.1%).

These results indicate that the majority of participants viewed all three anxiety disorders as impeding the vignette characters' ability to manage in daily life.

Table 6.4. How well do you think X is able to manage in day-to-day life? Descriptives, frequencies and percentages.

Frequency and Percentages of Survey Responses						
	Mean and SD	<b>A lot of trouble managing</b>	<b>Some trouble managing</b>	<b>Manages somewhat well</b>	<b>Manages extremely well</b>	<b>Missing</b>
<i>GAD</i>	3.23 (0.664)	83 (34.3%)	133 (55%)	19 (7.9%)	4 (1.7%)	3 (1.2%)
<i>STRESS</i>	2.25 (0.796)	14 (5.8%)	71 (29.3%)	115 (47.5%)	39 (16.1%)	3 (1.2%)
<i>PANIC</i>	3.30 (0.760)	109 (45%)	83 (34.3%)	36 (14.9%)	2 (0.8%)	12 (5%)
<i>SAD</i>	3.23 (0.737)	85 (35.1%)	96 (39.7%)	30 (12.4%)	3 (1.2%)	28 (11.6%)

### 6.3.2 Is there a significant difference in perceived impact across GAD, panic disorder and SAD?

Skewness and kurtosis were within normal range (+/-2). A repeated-measures ANOVA with Greenhouse-Geisser correction showed a significant effect of vignette condition on perceived impact,  $F(2.9, 613.4) = 118.5, p = 0.000, \eta^2 = 0.357$ .

Pairwise comparisons with Bonferroni correction showed significantly lower perceived impact of everyday stress than GAD ( $p < .00$ ), panic disorder ( $p < .00$ ) or social anxiety disorder ( $p < .00$ ). No significant differences in perceived impact were found between the three clinical vignettes.

**6.4.1 How concerned are adolescents for the wellbeing of hypothetical peers displaying symptoms of GAD, panic disorder and SAD?**

Overall, level of concern was high for all four vignettes, with a majority of participants indicating that they were either quite or extremely worried for all characters. Almost sixty percent (59.1%) of participants said they would be quite worried for the character with GAD, with 24.4% reporting that they were extremely worried. Similarly, 42.6% of participants reported being quite worried and 26% extremely worried for the character with social anxiety disorder. The highest proportion of participants reporting that they were extremely worried was in relation to the panic disorder vignette, at 57%, with a further 31.4% reporting that they were quite worried for their wellbeing.

The numbers of participants expressing higher levels of concern were lowest for the stress (control) vignette, although the level of concern expressed was still high, with 40.5% quite worried, and 18.6% extremely worried for the wellbeing of the character experiencing stress.

Table 6.5. If X was your friend, how worried would you be about their overall wellbeing? Descriptives, frequencies and percentages.

Frequency and Percentages of Survey Responses						
	Mean and SD	I would not be at all worried	I would be a little bit worried	I would be quite worried	I would be extremely worried	Missing
<i>GAD</i>	3.07 (0.674)	4 (1.7%)	35 (14.5%)	143 (59.1%)	59 (24.4%)	1 (0.4%)
<i>STRESS</i>	2.76 (0.782)	6 (2.5%)	90 (37.2%)	98 (40.5%)	45 (18.6%)	3 (1.2%)
<i>PANIC</i>	3.52 (0.652)	2 (0.8%)	14 (5.8%)	76 (31.4%)	138 (57%)	12 (5%)
<i>SAD</i>	3.06 (0.772)	6 (2.5%)	39 (16.1%)	103 (42.6%)	63 (26%)	31 (12.8%)



#### **6.4.2 Does level of concern vary significantly across GAD, panic disorder and SAD?**

A repeated-measures ANOVA showed a significant effect of vignette condition on level of concern,  $F(3, 627) = 54.7, p = 0.000, \eta^2 = 0.207$ .

Pairwise comparisons with Bonferroni correction showed a significantly higher level of concern for GAD, panic disorder and SAD than for stress (all  $p < .00$ ). In addition, concern was significantly higher for panic disorder than for the other two clinical disorders (both pairwise comparisons significant at  $p < .00$ ).

#### **6.5.1 What is the perceived prognosis for GAD, panic disorder, and SAD among adolescents?**

The majority of participants indicated that it would take all four vignette characters at least one or two months to feel better again. The proportion of participants indicating that it would take one or two months to feel better was 32.6% for GAD, 38.4% for stress, 24% for panic disorder and 24.4% for social anxiety disorder. The proportion of participants who felt that it would take longer than a few months to feel better was highest for panic disorder (63.2%) and lowest for stress (29.8%).

Relatively few participants reported that the vignette characters would feel better in the short term, particularly for panic disorder; only 0.8% and 5.8% answered that the peer would feel better in one or two days, or one or two weeks, respectively. In contrast, nearly 10% of participants reported that the person with GAD would feel better in one or two weeks.

Table 6.6. How long do you think it will take for X to feel better again? Descriptives, frequencies and percentages.

	Mean and SD	Frequency and Percentages of Survey Responses				Missing
		One or two days	One or two weeks	One or two months	Longer than a few months	
<i>GAD</i>	3.37 (0.795)	8 (3.3%)	23 (9.5%)	79 (32.6%)	128 (52.9%)	4 (1.7%)
<i>STRESS</i>	2.98 (0.862)	11 (4.5%)	55 (22.7%)	93 (38.4%)	72 (29.8%)	11 (4.5%)
<i>PANIC</i>	3.59 (0.647)	2 (0.8%)	14 (5.8%)	58 (24%)	153 (63.2%)	15 (6.2%)
<i>SAD</i>	3.49 (0.721)	3 (1.2%)	19 (7.9%)	59 (24.4%)	128 (52.9%)	33 (13.6%)

### 6.5.2 Is there a significant difference in perceived prognosis for GAD, panic disorder and SAD?

A repeated-measures ANOVA with Greenhouse-Geisser correction found a significant effect of vignette condition on perceived prognosis,  $F(2.79, 558.5) = 39.6, p = 0.000, \eta^2 = 0.165$ .

Pairwise correction with Bonferroni correction showed that participants perceived a significantly worse prognosis for GAD than for stress ( $p < .00$ ). There was also a significantly worse perceived prognosis for panic disorder than GAD ( $p < .00$ ) and stress ( $p < .00$ ). Finally, there was a significantly worse perceived prognosis for social anxiety disorder than for stress ( $p < .00$ ). There were no significant differences in prognosis between social anxiety disorder and either GAD or panic disorder.

### 6.6.1 What underlying causes do adolescents most frequently endorse for hypothetical peers

#### displaying symptoms of GAD, panic disorder and SAD?

Participants' level of agreement with various potential causes for the symptoms described in the vignettes are outlined in table 6.7 below. Participants' level of agreement with potential causes are also illustrated for the clinical vignettes in figures 6.1-6.3 below.

Table 6.7. What do you think is the underlying cause of X's problems? Frequencies and percentages.

		<b>GAD</b>					
		<b>Missing</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
<i>Personality</i>		3 (1.2%)	85 (35.1%)	88 (36.4%)	35 (14.5%)	25 (10.3%)	6 (2.5%)
<i>Chemical imbalance</i>		4 (1.7%)	52 (21.5%)	46 (19%)	73 (30.2%)	56 (23.1%)	11 (4.5%)
<i>Heredity (runs in families)</i>		4 (1.7%)	34 (14%)	61 (25.2%)	103 (42.6%)	31 (12.8%)	9 (3.7%)
<i>Problems from childhood</i>		8 (3.3%)	33 (13.6%)	74 (30.6%)	96 (39.7%)	27 (11.2%)	4 (1.7%)
<i>Trauma</i>		4 (1.7%)	25 (10.3%)	50 (20.7%)	106 (43.8%)	50 (20.7%)	7 (2.9%)
<i>Everyday stress</i>		2 (0.8%)	4 (1.7%)	4 (1.7%)	15 (6.2%)	120 (49.6%)	97 (40.1%)
<i>Overthinking</i>		4 (1.7%)	5 (2.1%)	8 (3.3%)	13 (5.4%)	95 (39.3%)	117 (48.3%)
<i>Mental illness</i>		5 (2.1%)	18 (7.4%)	38 (15.7%)	68 (28.1%)	79 (32.6%)	34 (14%)
<i>Physical illness</i>		4 (1.7%)	70 (28.9%)	79 (32.6%)	66 (27.3%)	17 (7%)	6 (2.5%)
		<b>STRESS</b>					
		<b>Missing</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
<i>Personality</i>		6 (2.5%)	109 (45%)	60 (24.8%)	35 (14.5%)	27 (11.2%)	5 (2.1%)
<i>Chemical imbalance</i>		7 (2.9%)	115 (47.5%)	73 (30.2%)	38 (15.7%)	9 (3.7%)	0 (0%)
<i>Heredity (runs in families)</i>		5 (2.1%)	60 (24.8%)	53 (21.9%)	45 (18.6%)	50 (20.7%)	29 (12%)
<i>Problems from childhood</i>		7 (2.9%)	83 (34.3%)	78 (32.2%)	46 (19%)	24 (9.9%)	4 (1.7%)
<i>Trauma</i>		8 (3.3%)	67 (27.7%)	75 (31%)	55 (22.7%)	32 (13.2%)	5 (2.1%)
<i>Everyday stress</i>		7 (2.9%)	21 (8.7%)	17 (7%)	30 (12.4%)	117 (48.3%)	50 (20.7%)
<i>Overthinking</i>		9 (3.7%)	26 (10.7%)	32 (13.2%)	46 (19%)	88 (36.4%)	41 (16.9%)

<i>Mental illness</i>	7 (2.9%)	92 (38%)	76 (31.4%)	53 (21.9%)	11 (4.5%)	3 (1.2%)
<i>Physical illness</i>	6 (2.5%)	110 (45.5%)	79 (32.6%)	41 (16.9%)	3 (1.2%)	3 (1.2%)

**PANIC**

	<b>Missing</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
<i>Personality</i>	14 (5.8%)	118 (48.8%)	73 (30.2%)	25 (10.3%)	11 (4.5%)	1 (0.4%)
<i>Chemical imbalance</i>	14 (5.8%)	44 (18.2%)	25 (10.3%)	68 (28.1%)	65 (26.9%)	26 (10.7%)
<i>Heredity (runs in families)</i>	14 (5.8%)	48 (19.8%)	44 (18.2%)	89 (36.8%)	41 (16.9%)	6 (2.5%)
<i>Problems from childhood</i>	14 (5.8%)	46 (19%)	58 (24%)	91 (37.6%)	31 (12.8%)	2 (0.8%)
<i>Trauma</i>	12 (5%)	36 (14.9%)	41 (16.9%)	103 (42.6%)	36 (14.9%)	14 (5.8%)
<i>Everyday stress</i>	15 (6.2%)	12 (5%)	24 (9.9%)	56 (23.1%)	97 (40.1%)	38 (15.7%)
<i>Overthinking</i>	15 (6.2%)	18 (7.4%)	37 (15.3%)	70 (28.9%)	67 (27.7%)	35 (14.5%)
<i>Mental illness</i>	14 (5.8%)	23 (9.5%)	21 (8.7%)	65 (26.9%)	82 (33.9%)	37 (15.3%)
<i>Physical illness</i>	13 (5.4%)	40 (16.5%)	35 (14.5%)	69 (28.5%)	61 (25.2%)	24 (9.9%)

**SAD**

	<b>Missing</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neither agree nor disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
<i>Personality</i>	33 (13.6%)	50 (20.7%)	41 (16.9%)	38 (15.7%)	58 (24%)	22 (9.1%)
<i>Chemical imbalance</i>	32 (13.2%)	51 (21.1%)	44 (18.2%)	69 (28.5%)	39 (16.1%)	7 (2.9%)
<i>Heredity (runs in families)</i>	35 (14.5%)	49 (20.2%)	46 (19%)	77 (31.8%)	33 (13.6%)	2 (0.8%)
<i>Problems from childhood</i>	34 (14%)	36 (14.9%)	30 (12.4%)	93 (38.4%)	42 (17.4%)	7 (2.9%)
<i>Trauma</i>	33 (13.6%)	26 (10.7%)	28 (11.6%)	100 (41.3%)	43 (17.8%)	12 (5%)
<i>Everyday stress</i>	35 (14.5%)	10 (4.1%)	25 (10.3%)	34 (14%)	99 (40.9%)	39 (16.1%)
<i>Overthinking</i>	37 (15.3%)	10 (4.1%)	15 (6.2%)	28 (11.6%)	84 (34.7%)	68 (28.1%)
<i>Mental illness</i>	37 (15.3%)	32 (13.2%)	30 (12.4%)	55 (22.7%)	64 (26.4%)	24 (9.9%)
<i>Physical illness</i>	33 (13.6%)	72 (29.8%)	67 (27.7%)	54 (22.3%)	10 (4.1%)	6 (2.5%)

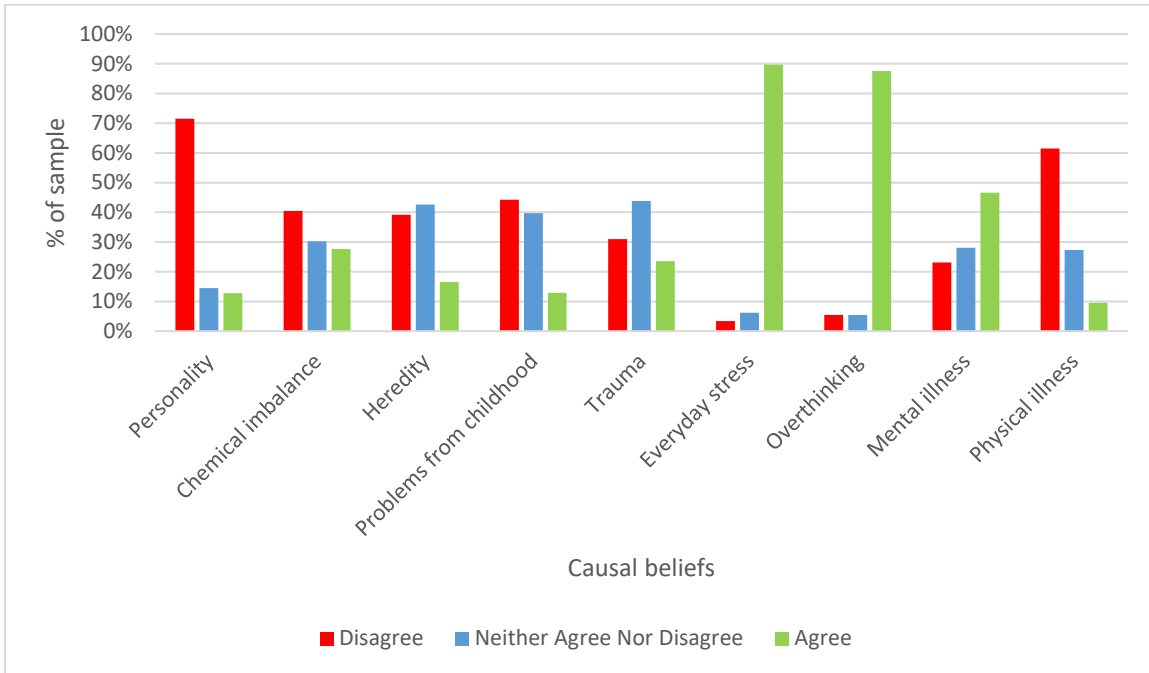


Figure 6.1. What do you think is the underlying cause of X's problems? Percentage of sample in overall disagreement, neither agreeing nor disagreeing, and in overall agreement with each cause for GAD

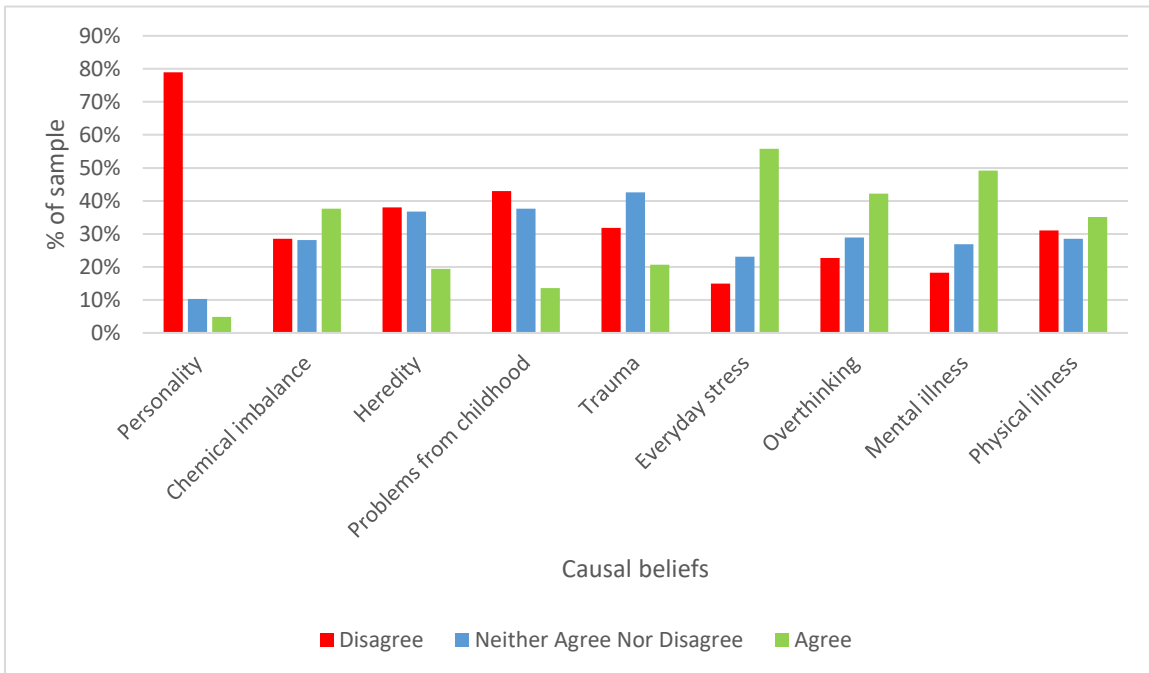


Figure 6.2. What do you think is the underlying cause of X's problems? Percentage of sample in overall disagreement, neither agreeing nor disagreeing, and in overall agreement with each cause for panic disorder.

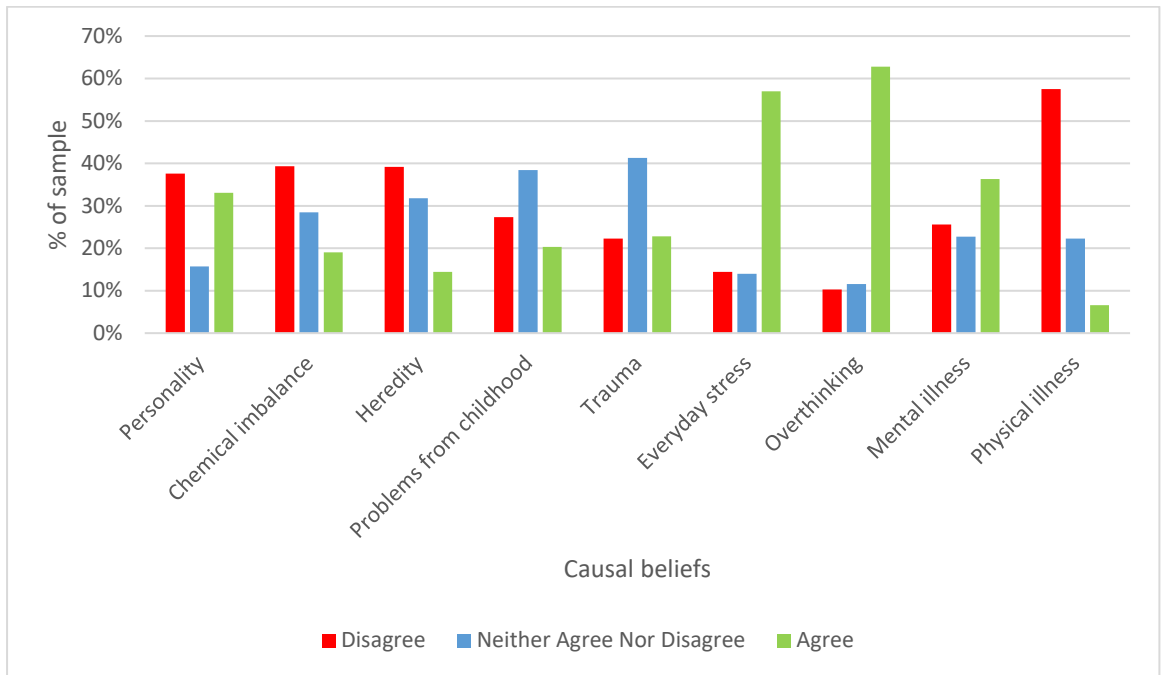


Figure 6.3. What do you think is the underlying cause of X's problems? Percentage of sample in overall disagreement, neither agreeing nor disagreeing, and in overall agreement with each cause for social anxiety disorder

The most frequently endorsed causes for the symptoms of GAD in terms of participant agreement were everyday stress (49.6% agree, 40.1% strongly agree) and overthinking (39.3% agree, 48.3% strongly agree). Less than half of participants agreed that mental illness was a cause of the symptoms (32.6% agree, 14% strongly agree). Levels of explicit agreement for other causes such as heredity (12.8% agree, 3.7% strongly agree), problems from childhood (11.2% agree, 1.7% strongly agree) or personality (10.3% agree, 2.5% strongly agree) were much lower.

For the non-clinical control condition, situational stress, the most frequently endorsed cause of symptoms was everyday stress (48.3% agree, 20.7% strongly agree), followed by overthinking (36.4% agree, 16.9% disagree) and heredity (20.7% agree, 12% strongly agree). Only 3.7% of participants agreed that stress was caused by a chemical imbalance. Less than 5% of participants felt that mental illness was a cause for the stress vignette.

Everyday stress was also the highest-rated cause for symptoms of panic disorder (40.1% agree, 15.7% strongly agree). Just under half of participants agreed that symptoms were caused by mental illness (33.9% agree, 15.3% strongly agree). Over a third of participants agreed that symptoms of panic disorder were caused by a physical medical problem (25.2% agree, 9.9% strongly agree). A relatively high proportion of participants (26.9% agree, 10.7% strongly agree) agreed that symptoms of panic disorder were caused by a chemical imbalance. In contrast, under 5% of participants felt that symptoms were caused by the person's personality.

Again, everyday stress (40.9% agree, 16.1% strongly agree) and overthinking (34.7% agree, 28.1% strongly agree) were the most frequently endorsed causes for social anxiety disorder. A third of participants, a relatively high proportion, agreed that social anxiety symptoms were caused by the person's personality (24% agree, 9.1% strongly agree). Slightly more than a third of participants agreed that mental illness was a cause of symptoms of social anxiety disorder. A fifth of

participants (17.4% agree, 2.9% strongly agree) agreed that symptoms were caused by problems from the person's childhood.

Table 6.8. Mean (SD) endorsement of causal categories in response to... What do you think is the underlying cause of X's problems? (1-5 scale, 1= strongly disagree, 5= strongly agree).

	GAD	STRESS	PANIC	SAD
<i>Personality</i>	2.08 (1.07)	1.98 (1.12)	1.7 (0.88)	2.81 (1.35)
<i>Chemical imbalance</i>	2.70 (1.18)	1.75 (0.86)	3.02 (1.27)	2.56 (1.14)
<i>Heredity</i>	2.66 (1)	2.73 (1.36)	2.62 (1.08)	2.48 (1.05)
<i>Problems from childhood</i>	2.55 (0.93)	2.10 (1.05)	2.50 (0.99)	2.78 (1.06)
<i>Trauma</i>	2.85 (0.96)	2.29 (1.08)	2.79 (1.07)	2.94 (1.03)
<i>Everyday stress</i>	4.26 (0.78)	3.67 (1.15)	3.55 (1.05)	3.64 (1.07)
<i>Overthinking</i>	4.31 (0.88)	3.37 (1.23)	3.28 (1.14)	3.90 (1.09)
<i>Mental illness</i>	3.31 (1.13)	1.97 (0.96)	3.39 (1.16)	3.09 (1.24)
<i>Physical illness</i>	2.20 (1.02)	1.77 (0.86)	2.97 (1.24)	2.10 (1.02)

### 6.6.2 Does endorsement of individual causality items vary significantly across anxiety disorders?

Repeated-measures ANOVAs showed a significant effect of vignette condition on endorsement of trauma ( $F(3, 552) = 25.99, p = 0.000, \eta^2 = 0.124$ ) and mental illness ( $F(3, 552) = 93.013, p = 0.000, \eta^2 = 0.336$ ) as causes of symptoms described in the vignettes. Repeated-measures ANOVAs with Greenhouse-Geisser corrections also showed a significant effect of vignette condition for personality ( $F(2.57, 473.7) = 44.158, p = 0.000, \eta^2 = 0.194$ ), chemical imbalance ( $F(3, 552) = 68.985, p = 0.000, \eta^2 = 0.273$ ), problems from childhood ( $F(2.85, 524) = 20.865, p = 0.000, \eta^2 = 0.102$ ), everyday stress ( $F(2.73, 503.64) = 23.16, p = 0.000, \eta^2 = 0.112$ ), overthinking ( $F(2.71, 499.39) = 43.153, p = 0.000, \eta^2 = 0.190$ ), and physical medical problem ( $F(2.28, 419.77) = 60.165, p = 0.000, \eta^2 = 0.246$ ).

No significant effect of vignette condition was found for heredity.

Pairwise comparisons using the Bonferroni correction showing the significant differences between vignette conditions for each causality item are described below:



- Personality: Participants were significantly more likely to endorse personality as a cause for social anxiety disorder than for GAD ( $p < .00$ ) or stress ( $p < .05$ ). Participants were also significantly less likely to endorse personality as a cause for panic disorder than for stress ( $p < .05$ ), social anxiety disorder ( $p < .05$ ), or GAD ( $p < .05$ ).
- Chemical imbalance: Participants were significantly more likely to endorse chemical imbalance as a cause for GAD than for stress ( $p < .05$ ), and for panic disorder than GAD ( $p < .05$ ), stress ( $p < .05$ ), or social anxiety disorder ( $p < .05$ ). Additionally, participants were significantly more likely to endorse chemical imbalance as a cause for social anxiety disorder than for stress ( $p < .05$ ).
- Problems from childhood: Participants were significantly more likely to endorse problems from childhood as a cause for GAD than for stress ( $p < .05$ ). Additionally, participants were significantly more likely to endorse problems from childhood as a cause for social anxiety disorder than for GAD ( $p < .05$ ), panic disorder ( $p < .05$ ), or stress ( $p < .05$ ). Finally, participants were significantly more likely to endorse problems from childhood as a cause for panic disorder than for stress.
- Trauma: Participants were significantly less likely to endorse trauma as a cause for stress than for GAD ( $p < .05$ ), panic disorder ( $p < .05$ ), or social anxiety disorder ( $p < .05$ ). There were no significant differences between any of the clinical vignettes.
- Everyday stress: Participants were significantly more likely to endorse everyday stress as a cause for GAD than for the stress vignette ( $p < .05$ ), panic disorder ( $p < .05$ ), or social anxiety disorder ( $p < .05$ ). No other significant differences in endorsement of everyday stress as a cause were found across vignettes.
- Overthinking: Participants were significantly more likely to endorse overthinking as a cause for GAD than stress ( $p < .05$ ), panic disorder ( $p < .05$ ), or social anxiety disorder ( $p < .05$ ). Participants were also significantly more likely to endorse overthinking as a cause for social anxiety disorder than for panic disorder ( $p < .05$ ), or stress ( $p < .05$ ).

- Mental illness: Participants were significantly less likely to endorse mental illness as a cause for stress than for GAD ( $p<.05$ ), panic disorder ( $p<.05$ ), or social anxiety disorder ( $p<.05$ ). There were no significant differences in endorsement of mental illness as a cause between the three clinical vignettes.
- Physical medical problem: Participants were significantly more likely to endorse a physical medical problem as a cause for panic disorder than for GAD ( $p<.05$ ), stress ( $p<.05$ ), or social anxiety disorder ( $p<.05$ ). Participants were also significantly less likely to endorse a physical medical problem as a cause for stress than for GAD ( $p<.05$ ) or social anxiety disorder ( $p<.05$ ).

### 6.7.1 Do adolescents recognise the need for external help for GAD, panic disorder and SAD?

The majority of participants recorded that yes, external help was needed, for all four vignette conditions. The proportion of participants who felt that the vignette character's symptoms warranted external help was highest for GAD (86.8%) and panic disorder (85.5%), followed by social anxiety disorder (69%), and lowest for non-clinical stress (57.9%).

Table 6.9. Do you think X needs help from another person to cope with their problems? Frequencies and percentages.

	Missing	Yes	No	Don't Know
<i>GAD</i>	0 (0%)	210 (86.8%)	4 (1.7%)	28 (11.6%)
<i>STRESS</i>	8 (3.3%)	140 (57.9%)	25 (10.3%)	69 (28.5%)
<i>PANIC</i>	14 (5.8%)	207 (85.5%)	1 (0.4%)	20 (8.3%)
<i>SAD</i>	32 (13.2%)	167 (69%)	17 (7%)	26 (10.7%)

### 6.7.2 Is there a significant difference in perceived need for help across anxiety disorders?

To facilitate the repeated-measures comparison of the categorical perceived need for help variable across vignettes, the “no” and “don’t know” responses were merged, leaving two categories (“yes” and “no/don’t know”) of responses, allowing for use of the McNemar test.

McNemar tests showed a statistically significant difference in the proportion of participants indicating that the vignette character needed help from another person between panic disorder and SAD ( $p<0.00$ ), and between stress and all three clinical vignettes ( $p<0.00$ ). A larger proportion of participants indicated “no/don’t know” to whether the person needed help from another person for SAD than for panic disorder, and for stress than for each of the three clinical vignettes.

Descriptive statistics (frequency and percentage) relating to perceived need for help across anxiety disorders are outlined in Table 6.10 below.

Table 6.10. Do you think X needs help from another person to cope with their problems? Breakdown by vignette (Frequency (percentage))

	GAD	PANIC	SAD	STRESS
<i>No/Don't Know</i>	32 (13%)	21 (9%)	43 (18%)	94 (39%)
<i>Yes</i>	210 (87%)	207 (85%)	167 (69%)	140 (58%)
<i>Missing</i>	0 (0%)	14 (6%)	32 (13%)	8 (3%)

## 6.8 What actions do adolescents suggest taking to help a hypothetical peer with GAD, panic disorder or SAD?

A basic content analysis was conducted on the open-ended help-giving responses. Participants gave up to four help-giving suggestions for each vignette; these responses were read through in depth, from which 11 categories of help-giving response were developed. Then, participants' help-giving suggestions were coded for the presence or absence of each help-giving category (e.g., did a given participant suggest involving an adult, offer practical support etc.). The 11 help-giving categories, along with sample help-giving suggestions for each, can be seen in Table 6.11 below.

Table 6.12 below summarises the number and percentage of participants who gave help-giving suggestions for each category and for each vignette.

Additionally, some participants left the open-ended help-giving question blank, wrote that they didn't know how to help, or said that nothing needed to be done (8 participants for GAD, 24 for stress, 36 for panic disorder, and 64 for social anxiety disorder).

Table 6.11. Help-giving categories and sample quotes

<i>Help-giving category</i>	Description of category	Sample help-giving suggestions
<i>Emotional support</i>	Talking to the person, listening to their problems, offering reassurance, letting them know you're there etc.	"talk about our problems and see where it goes from there" [GAD] "tell him that he's not alone and others feel the same" [GAD] "tell her everything will be okay" [Panic]
<i>Practical support</i>	Offering to help with day-to-day tasks or situations; helping with schoolwork, financial assistance etc.	"help her with her work" [GAD] "help him at school with homework" [GAD] "include him in conversations, to boost confidence" [Social anxiety disorder]
<i>Informal help</i>	Suggesting informal help and self-help; distraction (such as watching a film, going for a walk), getting fresh air etc.	"Ask if she would like to do something together just for fun and to help her relax" [Panic] "Get her mind off the topic when she's feeling ok, make some jokes and cheer her up" [GAD] "go for a jog in the morning with her" [GAD]
<i>Problem-focused</i>	Encouraging problem-focused self-help such as breathing exercises, meditation, mindfulness etc., or suggesting the person focuses on particular symptoms at a time	"tell her to meditate daily" [GAD] "help her with her paranoia first, then confidence" [Social anxiety disorder] "tell him to meditate and breathe" [Panic disorder]

<i>Explore problem</i>	Seeking more information about the problem, conducting research on the problem, trying to get to the root of the issue; e.g. asking how long the problem has been going on, why the person feels this way etc.	“Get her to accurately describe when it happens and what it feels like” [Panic disorder] “Ask her if anything has changed in her life recently” [GAD] “Research his behaviour online” [GAD]
<i>Involve an adult</i>	Involving a parent or other trusted adult, such as a teacher	“Get her to talk to her parents” [Panic disorder] “If they say nothing, talk to their parents” [GAD]
<i>Professional help</i>	Specific reference to professional help, including mental health professionals (psychologist/psychiatrist/counsellor), guidance counsellors, doctors etc.	“Have him...see a counsellor” [GAD] “Urge him to seek professional help” [Panic disorder] “Tell her to see a doctor” [Panic disorder] “Try to get him to go to therapy” [Social anxiety disorder]
<i>Generic "help"</i>	Generic reference to getting the person help	“Tell her to get some help” [GAD] “Get her help” [Panic disorder]
<i>Monitor</i>	Responses which reference monitoring, keeping an eye on, or checking up on the person regularly	“Keep an eye on him to see if it gets worse” [GAD] “Keep an eye on her” [Panic disorder] “Check in” [Panic disorder]
<i>Assess risk</i>	Explicitly or implicitly assessing the risk to the person or others	“Consider whether it’s serious or not” [GAD]
<i>Face fear</i>	Suggesting that the person face their fear, stand up to their worries, step outside of their comfort zone etc.	“To take her outside more than usual. Try to help overcome fear” [Panic disorder] “Take her out and try to get her over it” [Panic disorder] “I would try to include her and get her to socialise more” [Social anxiety disorder] “Try to make her speak in front of people” [Social anxiety disorder]

Table 6.12. Frequency and percentages of participants’ help-giving suggestions

	GAD	STRESS	PANIC	SAD
<i>Emotional support</i>	217 (89.7%)	190 (78.5%)	160 (66.1%)	150 (62%)
<i>Practical support</i>	15 (6.2%)	94 (38.8%)	1 (0.4%)	3 (1.2%)
<i>Informal help</i>	49 (20.2%)	34 (14%)	39 (16.1%)	15 (6.2%)
<i>Problem-focused</i>	14 (5.8%)	0 (0%)	4 (1.7%)	9 (3.7%)
<i>Explore problem</i>	55 (22.7%)	27 (11.2%)	46 (19%)	20 (8.3%)
<i>Involve an adult</i>	72 (29.8%)	37 (15.3%)	47 (19.4%)	24 (9.9%)
<i>Professional help</i>	39 (16.1%)	7 (2.9%)	98 (40.5%)	27 (11.2%)
<i>Generic "help"</i>	26 (10.7%)	7 (2.9%)	15 (6.2%)	11 (4.5%)
<i>Monitor</i>	34 (14%)	15 (6.2%)	14 (5.8%)	8 (3.3%)
<i>Assess risk</i>	1 (0.4%)	0 (0%)	0 (0%)	0 (0%)
<i>Face fear</i>	0 (0%)	0 (0%)	17 (7%)	41 (16.9%)

### *6.8.1 Help-giving suggestions for GAD*

The most popular category of help-giving response for GAD was emotional support, with 89.7% of participants including at least one emotional support suggestion (talking, reassurance etc.) in their response. Other types of help-giving response were less common for GAD but still suggested by a notable proportion of participants; 29.8% included at least one suggestion of involving an adult, 22.7% suggested exploring the problem, and a fifth of participants (20.7%) gave informal help-giving suggestions (distraction, going for a walk etc.). Only 16.1% of respondents suggested professional help for dealing with GAD.

### *6.8.2 Help-giving suggestions for Stress*

A large proportion (78.5%) of participants gave emotional support suggestions in response to the non-clinical stress vignette. 38.8% of participants suggested offering practical support which reflected the situation depicted in the vignette (e.g. offering financial assistance, helping the person find a part-time job etc.). 15.3% of participants suggested involving an adult in response to the stress vignette. Only 2.9% of participants suggested professional help for the person experiencing stress.

### *6.8.3 Help-giving suggestions for Panic disorder*

Again, emotional support responses were common for panic disorder, with 66.1% of participants suggesting at least one response in this category. Additionally, however, 40.5% of participants suggested professional help in response to the panic vignette, a relatively higher proportion than for the other scenarios. Just under one in five (19.4%) participants suggested involving an adult for panic disorder, while a similar proportion (19%) gave responses suggesting exploring the problem further.

#### *6.8.4 Help-giving suggestions for Social anxiety disorder*

Just over 60% of participants gave at least one emotional support response to the help-giving question for social anxiety disorder, while 16.9% of participants gave responses which fell into the “face fear” category; suggesting that the person with social anxiety step outside their comfort zone in order to overcome their fears. Only 11.2% of participants suggested professional help for social anxiety disorder, and only 9.9% suggested involving an adult.

#### *6.8.5 Overall Summary of Help-giving Responses*

While the pattern of help-giving responses was different across the vignettes, some general patterns emerged. Emotional support was by far the most popular category of help-giving response, across the three clinical anxiety vignettes, and the non-clinical stress vignette. Only a minority of participants suggested involving an adult for the clinical anxiety vignettes (ranging from 9.9% for social anxiety, to 29.8% for GAD). The proportion of participants suggesting professional help was also low, although this varied widely across the clinical vignettes, from a low of 11.2% for social anxiety disorder to a high of 40.5% for panic disorder. However, even for panic disorder, over half of participants did not suggest professional help. Overall, the results indicate a preference for emotional support and other informal help over involving an adult, or professional help.

#### **6.8.6 Does the likelihood of suggesting specific types of help vary significantly across anxiety disorders?**

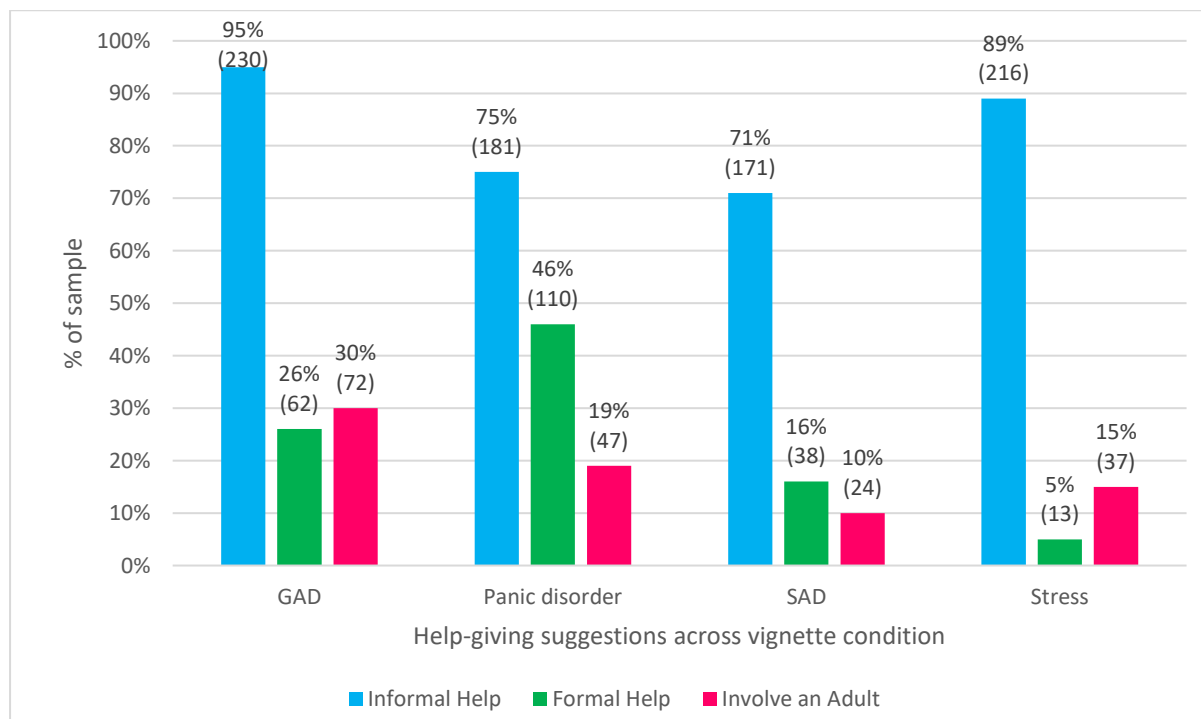
Due to the large number of categories of help-giving suggestions in the dataset, the various types of help-giving suggestions were collapsed to result in three categories of help-giving suggestion for the purpose of running comparisons across anxiety disorders; informal help, formal help, and involve an adult. The broader informal help category consists of the emotional support, practical support, informal help and self-help, problem-focused, explore problem, monitor, assess risk and

face fear categories, with a “yes” to informal help being coded when a participant’s responses had been coded “yes” under one or more of these categories. The broader formal help category consisted of the professional help and generic help categories (the generic help category consisted primarily of variations of “get X some help”, which is commonly understood to mean external help). The involve an adult category consisted of the existing “involve a parent or other adult” category.

The frequency and percentages of these three types of help-giving suggestion are outlined in

Figure 6.4 below:

Figure 6.4. Frequencies and percentages of suggestions of informal help, formal help, and involving a parent or other adult, across vignettes.



McNemar tests were used to compare the proportions of those suggesting versus not suggesting each type of help; informal help, formal help, and involving a parent or other adult, across the three clinical anxiety disorders.

#### 6.8.6.1. Comparisons of Informal Help suggestions across clinical anxiety disorders



Statistically significant differences in proportions of suggestions for informal help were found between GAD and panic disorder ( $p<0.00$ ), and between GAD and SAD ( $p<0.00$ ). The proportion of participants suggesting informal help was higher for GAD than for both panic disorder and SAD. No statistically significant difference in informal help suggestions was found between panic disorder and SAD.

#### *6.8.6.2. Comparisons of Formal Help suggestions across clinical anxiety disorders*

Statistically significant differences in proportions of suggestions for formal help were found between panic disorder and GAD ( $p<0.00$ ), panic disorder and SAD ( $p<0.00$ ), and between GAD and SAD ( $p<0.00$ ). The proportion of participants suggesting formal help was higher for panic disorder than for either GAD or SAD, and higher for GAD than for SAD.

#### *6.8.6.3. Comparisons of Involve a Parent/Adult suggestions across clinical anxiety disorders*

Statistically significant differences in proportions of suggestions involving a parent or other trusted adult were found between GAD and panic disorder ( $p<0.00$ ), GAD and SAD ( $p<0.00$ ) and panic disorder and SAD ( $p<0.00$ ). The proportion of participants suggesting involving a parent or other trusted adult was higher for GAD than for panic disorder, and higher for panic disorder than for SAD.

## 6.9. Gender differences in anxiety literacy

This section will discuss gender differences in MHL found in this study. Seventy-four students reported their gender as male, 165 as female, with 3 students identifying as another gender. These three students were not included in the gender analysis, as this is too small a group for meaningful statistical analysis. Categorical data were examined using Chi-square analysis. Scale data were analysed using t-tests where skewness and kurtosis values for the item fell between -2 and +2 (examined separately for males and females). Where skewness and kurtosis values fell outside the normal range, data were analysed using the non-parametric equivalent, the Mann-Whitney U test.

### 6.9.1. Recognition of anxiety disorders

Chi-square analyses were performed to assess whether participants differed in their ability to recognise anxiety disorders according to gender. For the purposes of the analyses, to fulfil minimum cell requirements of the chi-square test, the “correct specific label” and “mentions anxiety” categories were merged. This resulted in two categories, “incorrect” and “mentions anxiety or correct specific label”. No significant gender differences in recognition were found for GAD or for SAD, however there was a significant gender difference in recognition of panic disorder ( $\chi^2(1, 239) = 4.703, p = 0.03$ ). A higher percentage of males than females gave incorrect responses, and a higher percentage of females than males gave responses that fell into the “mentions anxiety or correct specific label” category.

### 6.9.2. Perceived impact of anxiety disorders

Independent-samples t-tests were conducted to examine whether perceived impact of anxiety disorders differed according to gender. No significant gender difference in perceived ability to manage was found for GAD. However, gender differences in perceived ability to manage were found for panic disorder, SAD, and situational stress. Specifically, females had significantly higher perceptions of negative impact on daily life than males for panic disorder ( $t(225) = -2.068, p < 0.05$ ,

Hedges'  $g^1 = 0.30$ ), SAD ( $t(209) = -2.411, p < 0.05$ , Hedges'  $g = 0.36$ ), and situational stress ( $t(234) = -2.699, p < 0.05$ , Hedges'  $g = 0.38$ ). Descriptive statistics are outlined in table 6.13 below.

Table 6.13. How well do you think X is able to manage in their day-to-day life? Descriptive statistics by gender (mean (SD)).

	GAD	PANIC	SAD	STRESS
<i>Male</i>	3.18 (0.69)	3.15 (0.84)	3.06 (0.75)	2.05 (0.81)
<i>Female</i>	3.27 (0.63)	3.38 (0.71)	3.32 (0.71)	2.35 (0.78)

### 6.9.3. Level of concern

Independent-samples t-tests showed a significant gender difference in level of concern for GAD, panic disorder and SAD, but no significant gender difference for situational stress. Specifically, females had significantly higher levels of concern than males for GAD ( $t(236) = -3.520, p < 0.05$ , Hedges'  $g = 0.50$ ), panic disorder ( $t(117.70) = -3.056, p < 0.05$ , Hedges'  $g = 0.46$ ) and SAD ( $t(206) = -2.424, p < 0.05$ , Hedges'  $g = 0.40$ ). Descriptive statistics are outlined in table 6.14 below.

Table 6.14. If X was your friend, how worried would you be about his overall emotional wellbeing? Descriptive statistics by gender (mean (SD)).

	GAD	PANIC	SAD	STRESS
<i>Male</i>	2.86 (0.69)	3.32 (0.71)	2.87 (0.81)	2.66 (0.78)
<i>Female</i>	3.18 (0.61)	3.62 (0.61)	3.15 (0.74)	2.83 (0.77)

### 6.9.4. Perceived prognosis

Independent-samples t-tests showed a significant gender difference in perceived prognosis for SAD and situational stress, but not for GAD. Specifically, females were significantly more likely than males to perceive a longer duration of symptoms for SAD ( $t(204) = -2.213, p < 0.05$ , Hedges'  $g = 0.33$ ) and situational stress ( $t(226) = -2.137, p < 0.05$ , Hedges'  $g = 0.30$ ). A Mann-Whitney U test showed no significant gender difference in perceived prognosis for panic disorder. Descriptive statistics are outlined in Table 6.15 below.

<sup>1</sup> Hedges'  $g$  effect sizes of approximately 0.2, 0.5, and 0.8 generally indicate small, medium and large effect sizes, respectively, as with the similar effect size measure, Cohen's  $d$  (Lakens, 2013; Brydges, 2019)

Table 6.15. How long do you think it will take for X to feel better? Descriptive statistics by gender (mean (SD)).

	GAD	PANIC	SAD	STRESS
<i>Male</i>	3.46 (0.69)	3.57 (0.65)	3.33 (0.80)	2.80 (0.89)
<i>Female</i>	3.36 (0.80)	3.61 (0.64)	3.57 (0.68)	3.06 (0.84)

#### 6.9.5. Beliefs about causality

As there were nine items relating to causal beliefs examined for each vignette, the significance level was set at 0.005 (0.05/9) to adjust for multiple comparisons (Bonferroni correction).

Independent-samples t-tests showed significant gender differences in levels of endorsement of personality and everyday stresses for panic disorder. Specifically, males were significantly more likely than females to endorse personality as a cause for panic disorder ( $t(105.021) = 3.083$ ,  $p < 0.005$ , Hedges'  $g = 0.50$ ). Females were significantly more likely than males to endorse everyday stresses as a cause of panic disorder ( $t(222) = -3.325$ ,  $p < 0.005$ , Hedges'  $g = 0.47$ ).

No significant gender differences in causal beliefs were found for GAD, SAD or situational stress.

Mann-Whitney U analyses of the non-normally distributed causality variables showed no significant gender difference in endorsement of everyday stresses or overthinking for GAD. Descriptive statistics are outlined in Table 6.16 below.

Table 6.16. What do you think is the underlying cause of X's problems? Descriptive statistics by gender (mean (SD)).

		GAD	PANIC	SAD	STRESS
<i>Personality</i>	Male	2.27 (1.14)	1.99 (1.05)	2.87 (1.31)	2.18 (1.28)
	Female	1.93 (0.95)	1.56 (0.76)	2.79 (1.37)	1.86 (1.01)
<i>Chemical imbalance</i>	Male	3.01 (1.06)	3.30 (1.26)	2.75 (1.12)	1.74 (0.90)
	Female	2.57 (1.21)	2.90 (1.23)	2.49 (1.15)	1.74 (0.85)
<i>Heredity</i>	Male	2.73 (0.91)	2.79 (1.03)	2.52 (1.00)	2.59 (1.29)
	Female	2.62 (1.03)	2.55 (1.11)	2.47 (1.08)	2.79 (1.41)
<i>Problems from childhood</i>	Male	2.56 (0.94)	2.47 (0.96)	2.81 (1.01)	2.12 (1.07)
	Female	2.54 (0.92)	2.52 (1.01)	2.77 (1.09)	2.07 (1.04)
<i>Trauma</i>	Male	2.84 (1.01)	2.75 (1.08)	2.90 (0.91)	2.40 (1.09)
	Female	2.85 (0.94)	2.78 (1.06)	2.97 (1.08)	2.23 (1.09)
<i>Everyday stress</i>	Male	4.26 (0.76)	3.23 (1.03)	3.47 (1.07)	3.53 (1.19)
	Female	4.28 (0.76)	3.72 (1.04)	3.74 (1.05)	3.73 (1.14)
<i>Overthinking</i>	Male	4.49 (0.67)	3.28 (1.12)	3.70 (1.10)	3.34 (1.16)
	Female	4.24 (0.93)	3.29 (1.17)	4.01 (1.08)	3.39 (1.28)
<i>Mental illness/psychological problem</i>	Male	3.35 (1.14)	3.48 (1.16)	3.21 (1.25)	1.92 (0.97)
	Female	3.29 (1.12)	3.37 (1.17)	3.05 (1.25)	1.97 (0.96)
<i>Physical medical problem</i>	Male	2.11 (1.08)	3.11 (1.24)	1.97 (0.97)	1.70 (0.78)
	Female	2.24 (0.99)	2.91 (1.24)	2.14 (1.04)	1.79 (0.91)

#### 6.9.6. Perceived need for help

Chi-square analyses were performed to examine whether participants differed in their perception of the need for help for anxiety disorders according to gender. To facilitate the minimum cell requirement of the Chi-square test, the “no” and “don’t know” responses were merged, leaving two categories, “yes” and “no/don’t know”. No significant gender difference in perceived need for help was found for GAD, panic disorder, or social anxiety disorder. There was also no significant gender difference found in perceived need for help for situational stress.

#### 6.9.7. Type of help suggested

The proportion of help-giving suggestions which fell into each of the three condensed help-giving categories (formal, informal and involving a parent) were compared across gender. Chi-square analyses were run to examine gender differences in participants' help-giving suggestions for each of these three categories. No significant gender difference in presence of informal help suggestions were found for GAD, panic disorder, SAD, or situational stress. No significant gender difference in presence of formal help-suggestions were found for GAD, panic disorder, SAD, or situational stress. No significant gender difference in presence of help suggestions involving a parent or other adult were found for GAD, panic disorder, SAD, or situational stress.

## Chapter 7: Adolescent Anxiety Literacy: Discussion

This chapter will discuss the results of the study relating to anxiety literacy outlined in Chapter Six, by each component, disorder, and gender.

### 7.1. Recognition of anxiety disorders among adolescents

Recognition of anxiety disorders in this sample of adolescents was mixed. Responses that used the correct specific label of disorders, or similar specific language (e.g., “social anxiety” for SAD, or “panic attacks” for panic disorder) were low overall, at 0% for GAD, 14% for SAD, and 38% for panic disorder. While the low use of the specific term “generalised anxiety disorder” or “generalised anxiety” for GAD may be expected among a non-professional sample, it should be noted that only two participants used the label “anxiety disorder” for GAD, and two participants for panic disorder. It should also be noted, that a large proportion of the responses coded as correct for panic disorder included “panic attacks” and “anxiety attacks”. While these are accurate descriptions of the symptoms experienced by the vignette character for panic disorder, panic attacks and anxiety attacks are distinct from panic disorder itself; they are a key feature of the disorder, but a person can have panic attacks without having panic disorder; the fear of future attacks is a vital part of panic disorder (APA, 2013). It is unclear if participants understand the difference, or if “panic attacks” is the more common term for panic disorder in the adolescent population.

While the proportion of participants capable of specifically recognising the clinical anxiety disorders was low, participants did have some level of general recognition of anxiety. Forty-four percent of participants mentioned anxiety when labelling GAD, 22% for panic disorder, and 26% for SAD. The use of the terms “anxious” and “anxiety” may represent recognition of anxiety disorders, as these general terms are often used in media when discussing clinical anxiety disorders. The low percentage of responses mentioning anxiety for the stress vignette (<10%) suggests that participants are making a distinction here between clinical and non-clinical conditions. It may also be however, that participants are using these words in an everyday sense, and are simply labelling

the emotional state of anxiety, rather than recognising the presence of an enduring, clinical disorder. Indeed, a sizeable proportion of participant labels referred to either a) non-clinical emotional problems (“worried”, “nervous” etc.) describing temporary states of unease, or b) to stress or a situational problem. Nearly half of the labels for GAD, and four out of ten labels for SAD fell into these two categories. These kinds of labels were less common for panic disorder, around one in ten responses. As noted in Chapter Two, anxiety disorders such as GAD and SAD may be more likely to be normalised by the public, due to their symptoms being similar to common emotional experiences such as stress, worry or shyness, which is reflected in people with these disorders often failing to recognise that they are displaying symptoms of mental illness, delaying help-seeking and treatment as a result (Kasper, 2006; Thompson et al, 2008).

The nature of disorders like GAD and SAD is that the content of the worries often reflects common sources of worry for most people (family, health, public speaking) taken to an extreme – they may thus be easier to dismiss as being just an extension of “normal” experience, with the line between normal and clinical worry unclear. Despite the vignettes explicitly describing the impact and duration of symptoms, a large proportion of participants used informal, everyday language that implies the vignette character’s experiences are temporary rather than enduring. Indeed, for the panic vignette, which has more obvious symptoms, the use of non-clinical emotional terms such as “worried” was much lower than for the other two vignettes. Recognition (either correct specific label or mentions anxiety) was significantly better for panic disorder than either GAD or SAD with no significant differences in recognition between GAD and SAD. This may well be because symptoms of panic disorder are more visible, specific, and more clearly out of the ordinary than symptoms such as GAD and SAD, perhaps making them more easily recognisable. However, 12% of participants labelled panic disorder as being a physical medical problem, suggesting that even for panic disorder, there is a tendency among some participants to misperceive the problem. This is unsurprising, given that people experiencing panic disorder often present to hospitals under the assumption that they are experiencing a medical emergency (Bandelow & Michaelis, 2015).



Previous research on ability to recognise and correctly label anxiety disorders in adult samples is broadly in line with the present findings. Less than half of participants could recognise panic disorder or GAD in a study by Coles and Coleman (2010), while less than one in five could identify panic disorder, GAD or SAD in a 2014 study by Coles et al. (2014). Even worse recognition rates (less than 3%) were found for panic disorder and GAD by Furnham and Lousley (2013), although a third of participants labelled panic disorder as “panic attacks”, making these results more similar to those of the present study. Furnham and Lousley (2013) also found that one in five participants labelled GAD using everyday language such as “worrier”, similar to the results presented here, and note that other anxiety disorders, such as agoraphobia, are less likely than GAD to be conceptualised as part of normal life, as they “...*may be seen as more unusual and as having a greater impact on people*” (Furnham & Lousley, 2013, pp. 529). Recognition of GAD, SAD, and panic disorder are consistently low among adult samples, lower than other anxiety disorders such as OCD and PTSD, which again, may be more obviously unusual and visible (Furnham & Lousley, 2013; Hadjimina & Furnham, 2017).

There is a lack of research into adolescent anxiety literacy to compare the present results to, with the few studies which have been conducted largely only including SAD; these point to even worse recognition of anxiety disorders in adolescents, with correct recognition of SAD by only three percent of adolescent participants in one study (Reavley & Jorm, 2011b). Reavley and Jorm (2011a) found that less than one in ten participants aged over fifteen could correctly identify SAD, similar to the 14% recognition rate in the present study. More generally, recognition of mental illness among adolescents and older children has been found to be lower than in adult samples (Wright et al., 2005; Burns & Rapee, 2006; Byrne, Swords & Nixon, 2015; Georgakakou-Koutsonikou, Taylor & Williams, 2018). With the general lack of research into adolescent mental health literacy in general, and adolescent anxiety literacy in particular, few conclusions can be drawn as to how recognition of anxiety disorders compares to recognition of other mental illnesses in adolescents. However, the results of the present study, in line with previous research in both adult and adolescent samples,

suggests that recognition of anxiety disorders is generally low among adolescents, but that some level of recognition is present among participants, as demonstrated by the use of labels such as “anxiety” and “anxious”.

## **7.2. Perceived impact of anxiety disorders among adolescents**

Over three-quarters of participants felt that the vignette characters displaying symptoms of clinical anxiety disorders had either some or a lot of trouble managing in day-to-day life, suggesting that the majority of adolescents in our sample are able to recognise the impact of anxiety symptoms on functioning, even when accurate labelling of specific disorders is low. The perceived impact of stress on daily life was significantly lower than for all three clinical vignettes, with just over a third of participants responding that the stress character had some or a lot of trouble managing in daily life, suggesting that participants are able to differentiate between clinical and non-clinical scenarios in terms of perceived impact. This suggests that, while recognition of disorders themselves may be low, adolescents may nonetheless recognise that something is wrong, and that symptoms of anxiety disorders affect functioning in a way that normal everyday stress does not.

Previous research has not explicitly examined perceived impact in the same manner as the present study, however, studies have examined perceived severity of symptoms, perceived distress etc. Paulus et al., (2015), for example found that participants significantly underestimated the distress severity of GAD compared to experts, and could only correctly estimate the level of SAD for severe cases. In contrast, participants overestimated the distress severity of depression. In the present study, participants largely recognised that anxiety disorders have a significant impact on daily life, while the distress of anxiety disorders was underestimated in the Paulus et al. (2015) study.

However, only a third of participants in the present study felt that the vignette character had a lot of trouble managing for GAD and SAD, compared to nearly half for panic disorder. The vignettes were designed using DSM-V criteria, and explicitly described severe disruption to daily functioning

(see Appendix C), so this is a relatively small proportion of participants recognising the extent of the impact of GAD and SAD on daily life.

### **7.3. Level of concern about anxiety disorders reported by adolescents**

Level of concern was high across the clinical vignettes, with over 70% of participants expressing that they would be either “quite worried” or “extremely worried” about the character’s wellbeing for GAD, panic disorder and SAD. However, between 15 and 19 percent of participants said they would not be at all worried, or would only be a little bit worried for GAD and SAD, suggesting that the symptoms of these conditions may be less immediately concerning to adolescents than for panic disorder, for which these responses were only given by 7% of participants. This is supported by the fact that level of concern was significantly higher for panic disorder than for either GAD or SAD. This may be related to the presentation of panic disorder as more immediately alarming and out of the ordinary, with the presence of severe, and specific physical symptoms less easily ignored or dismissed than the symptoms of GAD or SAD. Additionally, participants expressed significantly higher levels of concern for all three clinical vignettes than for the stress vignette, suggesting that participants are again differentiating between clinical and non-clinical conditions.

These results are similar to those found in an adult sample by Coles et al. (2014), who found that three quarters of participants felt that the symptoms described in vignettes depicting GAD, SAD, panic disorder and depression were a cause for concern, although levels of concern for GAD and SAD were significantly lower than those of depression, while levels of concern for panic disorder were similar to those of depression, suggesting that GAD and SAD were more likely to be underestimated than those of panic disorder or depression. The results of the present study are also similar to those found in an adolescent sample by Coles et al. (2016), which showed that levels of concern were significantly higher for social anxiety than for stress, suggesting a perceived distinction in severity between SAD and stress similar to the significantly greater levels of concern for the clinical anxiety disorder vignettes than the stress vignette in the present study.

#### **7.4. Beliefs about prognosis for anxiety disorders**

Between 24-38% of participants felt that it would take the characters with clinical anxiety disorders one or two months to recover, with over half of participants indicating that it would take longer than a few months, indicating that participants have a sense of the long-term nature of anxiety disorders. This suggests that while use of everyday language to label disorders was common, participants do grasp the enduring nature of symptoms to some extent. Judgements about prognosis were significantly more positive for the stress vignette than the three clinical vignettes, again suggesting a level of differentiation between clinical and non-clinical disorders among participants. Participants perceived a significantly longer time to recovery for panic disorder than for GAD, which is interesting, given that GAD is one of the most persistent anxiety disorders (Mendlowicz & Stein, 2000). It must also be noted that over one in ten participants felt that the GAD character would feel better in two weeks (with 9% saying the same for SAD, and 6% for panic disorder), suggesting that a minority of participants view symptoms as temporary.

Relatively few studies in the anxiety literacy literature have included beliefs about prognosis in their measures of MHL, but Coles et al. (2016) included SAD in a study of adolescent MHL, and found that both depression and SAD were perceived to have a significantly longer course than situational stress, with no significant difference in perceived prognosis between SAD and depression. Clearly, more research in this area is necessary, but again, results suggest that participants in the present study are consistently differentiating between clinical and non-clinical conditions; though a sizeable minority viewed symptoms of clinical anxiety as likely to resolve in a week or two.

#### **7.5. Causal beliefs about anxiety disorders**

Everyday Stress as a cause had a high level of agreement for all three clinical vignettes, with between 56-90% of participants agreeing that stress was a cause across the clinical scenarios.

Overthinking also had high levels of agreement for GAD and SAD. Everyday stress was significantly

more likely to be endorsed as a cause for GAD than for panic disorder, SAD, and even the actual stress vignette, as was overthinking. This suggests that again, a large proportion of participants are conceptualising clinical anxiety disorders in “everyday” terms, situating them as products of the environment (stress) or the person themselves (overthinking); this especially appears to be the case for GAD. This is in line with previous studies in adult samples which have found that anxiety was most often attributed to causes such as stress (Marcus & Westra, 2012), and studies which have found that people who experience anxiety disorders themselves often misinterpret them as being due to situational stress (Thompson, Issakidis & Hunt, 2008). It is also worth noting that the endorsement of “overthinking” as a cause is likely closely related to the symptoms described in the vignette for GAD in particular, as well as SAD, both of which, in line with the DSM-V diagnostic criteria for these two conditions, emphasise the cognitive symptoms experienced by people with these conditions. It may be the case that a proportion of participants are intuitively choosing “overthinking” as a cause for the symptoms in these vignettes for this reason. Indeed, overthinking was frequently used as a label for the symptoms by participants, particularly for GAD (see section 6.2.1, page 117).

Notably, personality was significantly more likely to be endorsed as a cause for SAD than for GAD, panic disorder, or situational stress, endorsed by a third of participants. This is interesting, given the qualitative difference in the content of the labels given under the “non-clinical emotional problem” category between GAD and SAD; focused on emotional states such as worry for GAD, versus an emphasis on individual differences such as shyness and a lack of self-confidence for SAD. This is interesting in the context of previous findings showing that one in five adults believe that SAD was caused by some kind of personal weakness (Scholfield et al., 2016).

For GAD and SAD, the majority of participants disagreed that mental illness was an underlying cause of symptoms, and only half of participants agreed that mental illness was a cause for panic disorder – this suggests that most adolescents are not generally conceptualising anxiety disorders

as mental illness. This may indicate that participants who used phrases such as “anxious” or “anxiety” to label anxiety disorders did not mean them in a clinical sense, or it may be that participants did intend these phrases to capture clinical anxiety, but that they do not consider anxiety disorders themselves to be mental illnesses. This tendency not to conceptualise anxiety disorders as mental illnesses is consistent with prior research in adult samples; mental illness was rarely chosen as a cause for GAD and panic disorder in a study by Coles and Coleman (2010), and half of participants in a study by Schubert et al. (2014) did not recognise anxiety disorders to be symptomatic of mental illness. It could be the case that “mental illness” as a category in the public understanding refers more to severe disorders such as schizophrenia, than for disorders such as anxiety which may be more likely to be seen as an extension of “normal” experience. Studies have found that portrayals of mental illness in media often focus on the most severe kinds of psychiatric disorders involving symptoms of psychosis (schizophrenia and bipolar disorder) and that these depictions tend toward stereotypical portrayals of dangerous, violent people, which may then influence people’s conceptualisations of mental illness (Quintero Johnson & Riles, 2018). It may thus be that the term “mental illness” in the public consciousness recalls these more severe examples which dominate the public portrayals of the mentally ill in media.

More research is needed to examine the intricacies of beliefs and conceptualisations of anxiety disorders in the context of mental illness more broadly. Participants were, however, significantly more likely to endorse mental illness as a cause for the three clinical vignettes than everyday stress, again suggesting a level of differentiation between clinical and non-clinical conditions in the sample.

The majority of participants disagreed that chemical imbalance was a cause for all three clinical vignettes – suggesting that biological/neurochemical explanations for anxiety disorders are not favoured by adolescents. This is in contrast with evidence that endorsement of biological/neurochemical causes for mental illness in general is increasing (Schomerus et al., 2012).

It is unclear if this distinction is a function of beliefs about anxiety specifically – previous studies have shown biological/neurochemical explanations to be more common for schizophrenia or psychosis than for depression, for example (Matschinger & Angermeyer, 1996; Samouilhan & Seabi, 2010) , or whether biological explanations for mental illnesses generally are less common among adolescents than adults. More research is needed. It is worth noting, however, that over a third of participants did agree that chemical imbalance was a cause of panic disorder, significantly higher than for all other vignettes, again underlining perceived differences between panic disorder and the other two clinical vignettes. Finally, one in three participants also agreed that a physical medical problem was a cause of panic disorder, suggesting that participants may be misinterpreting symptoms of panic disorder as symptoms of a physical illness, consistent with the mislabelling of panic disorder as physical illness by 12% of participants.

#### **7.6. Adolescents' beliefs about the need for help for anxiety disorders**

The majority of participants (>69%) recognised the need for help for the three clinical vignettes (and 58% indicated that external help was needed for the stress vignette as well), indicating that a large majority of participants view clinical anxiety disorders as warranting help from another person. However, nearly one in five participants either said no, or that they did not know if the person needed help for SAD, with 7% explicitly saying no, that the person with SAD did not need help. A significantly larger proportion of participants indicated that help was needed for the person with panic disorder than for the person with SAD, and for all three clinical vignettes than stress, suggesting that, as in other aspects of MHL, participants can differentiate between clinical and non-clinical problems. These results are in line with those found in adult samples; Schubert et al. (2014) who found that most adults recommended seeking help for anxiety disorders, but also found that participants were more likely to recommend seeking help for panic disorder than for GAD or SAD. Furnham and Lousley (2013) found that there was significantly lower perceived need for help for GAD than for panic disorder or other anxiety disorders such as OCD, with the authors

noting that people may conceptualise GAD as part of everyday life, rather than as a mental illness warranting treatment (Furnham & Lousley, 2013). A relatively rare MHL study involving an adolescent sample that included SAD, found that adolescents were less likely to suggest seeking help for SAD than for depression, suggesting that the seriousness of SAD as a condition may be relatively underestimated (Reavley & Jorm, 2011b).

### **7.7. Type of help suggested for anxiety disorders by adolescents**

Informal types of help, such as offering emotional support, or informal help-giving suggestions, primarily involving distraction, were by far the most frequently suggested by participants for anxiety disorders. Nearly two in five participants suggested practical help for the situational stress vignette (i.e., helping with the situation), potentially reflecting the fact that it is the difficult environmental conditions which are the primary source of distress for the stress vignette.

Approximately one in five participants said that they would explore the problem (seek further information, try to get to the root of the problem, etc.) for GAD and panic disorder, while this type of help-giving suggestion was given at half the rate for SAD and stress, suggesting that a minority of participants feel that more information is needed in order for them to help the characters with GAD and panic.

Notably, for SAD, just under one in five participants suggested activities/actions that involved the person “facing their fear” in some way (suggesting that symptoms of SAD are being perceived as personal obstacles to overcome, rather than as distressing symptoms of mental illness). This is supported by the relatively high proportion of participants (one in five) who said either that they did not know if the SAD character needed help, or that the SAD character did not need help to cope with their problems, and the higher proportion of participants endorsing personality as a cause of SAD than for the other two disorders.



A large majority of participants (>70%) did not mention involving a parent or other trusted adult for anxiety disorders. Rates of suggesting professional help were even lower, just 16% and 11% for GAD and SAD respectively. These results are concerning – adolescents are not mental health experts and cannot be expected to provide adequate support for their peers, but the low rates of suggestion for involving a parent or adult, or professional help suggest a focus primarily on informal, peer support rather than a recognition of the need for more substantial intervention for clinical anxiety disorders. This finding is similar to results from a study on depression literacy in adolescents in Ireland, in which a significant proportion of the sample did not mention involving an adult (Byrne et al., 2015). Professional help was mentioned by 40% of participants for panic disorder, but this still leaves two thirds of participants who did not mention professional help, and it may be the case that the tendency among some participants to misperceive panic disorder as a physical medical problem could account for some of these suggestions of professional help, supported by the fact that many professional help suggestions for panic disorder were medical in nature (e.g. doctor, hospital). This tendency to suggest medical help for panic disorder has been found in previous studies (Furnham & Lousley, 2013; Schubert et al., 2014; Gallagher & Watt, 2019).

When types of help were condensed (to informal help, formal help, and involving a parent) and compared across clinical disorders, significant differences were found, with informal help significantly more likely to be suggested for GAD than for panic disorder or SAD, and formal help significantly more likely to be suggested for panic disorder than for GAD or SAD, and for GAD than for SAD. Suggesting involving a parent was significantly more likely for GAD than for panic disorder, and for panic disorder than SAD. This suggests that participants may view GAD as more manageable with informal help than either panic disorder or SAD, in keeping with findings from this study and others that point to symptoms of GAD being perceived as normal (Thompson, Issakidis & Hunt, 2008). The higher proportion of suggestions of formal help for panic disorder again point to this condition as appearing to be the most immediately alarming to participants.

Evidence from the adult anxiety literature has shown that panic disorder had high rates of recommendations for professional help, with lower rates of recommendations for GAD and SAD (Coles & Coleman, 2010; Coles et al., 2015; Schofield et al., 2016), suggesting that panic disorder may be taken more seriously than GAD and SAD in adult samples. Interestingly, suggestions involving a parent were significantly higher for GAD than for panic disorder, and for panic disorder than SAD; more research is needed to examine why this may be the case, but it could be the case that in the rare event that participants suggested a more formal type of help, they were more likely to focus on medical/professional help for panic disorder due to the nature of the symptoms, and skip the “involving a parent” step, whereas for GAD they may be more inclined to take the intermediate step of involving an adult.

Overall, the results demonstrate a preference among adolescents for emotional support such as talking, and other informal help (such as distraction; going for a walk, watching a film etc.) for clinical anxiety disorders over involving an adult or suggesting professional help. This has been previously demonstrated in both the adolescent anxiety literacy literature, and the adolescent MHL literature in general. In the general adolescent MHL literature, informal support from family and friends is by far the most commonly suggested type of help (Wright et al., 2005; Kelly & Jorm, 2007). Indeed, Kelly et al. (2006) found that for a majority of participants, increased social support was the only help-giving action they said that they would undertake to help a friend with depression or conduct disorder. This, along with the results of the present study, suggest that adolescents do not generally express help-giving intentions that will result in their peers with mental illness accessing effective help.

Again, the specific anxiety literacy literature in adolescents is lacking, but it may be the case that help-giving suggestions for anxiety disorders are particularly poor for adolescents. Overall quality of help-giving suggestions was low in a study by Mason et al. (2015), and the proportion of adolescents suggesting involving an adult was significantly lower for SAD than for depression.

Friends and family were the most common recommended source of help in Coles et al. (2016), and were suggested at higher rates for SAD than depression. These results suggest that adolescents may be particularly likely to suggest these informal sources of help for anxiety disorders such as SAD, which is supported by the findings of the present study.

This emphasis on informal help-giving may be because adolescents are responding in terms of what they themselves can do to provide help directly to the person in need (talking to them, distracting them), and may also reflect their own preference for peer support when they themselves are experiencing mental health difficulties (Clark et al., 2018).

Additionally, however, it may reflect the focus of the information provided to the public about mental illness, especially when discussing depression, anxiety, or “mental health” in general. In the Irish context specifically, a number of high-profile public health campaigns around the generic “mental health” term have emphasised actions that position mental ill-health as being primarily controllable by the individual. For example, the “Little Things” mental health campaign run by the Health Service Executive (HSE) emphasises informal actions such as talking, exercise, diet, and socialising “to protect our own mental health” (Health Service Executive, 2018). Campaigns such as these emphasise personal responsibility and tend not to discuss professional help and services; which may reflect the fact that the public mental health service in Ireland is severely underfunded and understaffed, particularly for young people, with the staffing levels in child and adolescent mental health services (CAMHS) in Ireland far below recommendations, despite increasing demand (Cullen et al., 2017; McNicholas, 2018; McNicholas et al., 2020), along with the fact that there are as yet no public mental health campaigns targeting particular mental disorders, or directing people towards HSE services for those disorders. While these informal self-help activities are likely useful for those experiencing very mild symptoms of depression or anxiety, or stress, (Jorm & Griffiths, 2006), the evidence is clear that once reaching the clinical threshold, without professional treatment, anxiety disorders are long-term conditions with severe personal and public impact

(Schonfeld et al., 1997; Yonkers, Bruce, Dycck & Keller, 2003; Cannon et al., 2013; Wolitzky-Taylor et al., 2014; OECD, 2018). These sorts of large-scale public health messaging campaigns may inadvertently minimise conditions such as anxiety disorders and suggest that they are treatable with self-help interventions, which may partially explain the overwhelming prevalence of generic suggestions such as “talk” and “go for a walk” among the sample in the present study.

### **7.8. Gender differences in anxiety literacy**

Significant gender differences in anxiety literacy were found for recognition, perceived impact, level of concern, beliefs about prognosis and causal beliefs, although these varied by disorder. Where present, gender differences largely pointed toward better MHL among female participants than males, with improved recognition, higher levels of concern, greater understanding of the impact of anxiety disorders, and beliefs about prognosis that are in line with the actual progression of disorders (Mendlowicz & Stein, 2000; APA, 2013). Specifically, female participants had significantly better recognition of panic disorder than males, were significantly more likely to perceive symptoms as having a negative impact on daily life than male participants for panic disorder, SAD, and situational stress, and had significantly higher levels of concern than male participants for all three clinical vignettes. Females were significantly more likely than males to think that it would take longer for the person to feel better for SAD and situational stress, with no gender differences in beliefs about prognosis for GAD or panic disorder. Female participants were also significantly less likely to endorse personality as a cause of panic disorder, and significantly more likely than males to endorse everyday stresses as a cause of panic disorder. No gender differences in causal beliefs for GAD or SAD were found. Measures of effect size showed the gender differences to be largest (medium) for level of concern for all three clinical vignettes, and for endorsement of personality and everyday stresses as causes for panic disorder.

The findings are broadly supportive of the hypothesis proposed in Chapter Two, which expected that anxiety literacy would be higher across all components and disorders for female participants than for male participants, although with a few exceptions, most notably that there were no significant gender differences in perceived need for help, or type of help suggested. These findings are also largely in line with previous research into gender and MHL, which, overall, has found that females tend to have higher MHL than males, but that this depends on disorder, and component of MHL being measured (Furham et al, 2014; Reavley et al, 2014). Previous research into gender differences in anxiety literacy specifically in adult samples has shown inconsistent results, with showing no gender differences in recognition or causal beliefs for anxiety disorders (Furnham & Lousley, 2013; Gallagher & Watt, 2019) but also showing more recognition of the illness burden of anxiety disorders among female participants (Furnham & Lousley, 2013). The present study only found gender differences in recognition of panic disorder, not GAD or SAD, and also only found gender differences in some causal beliefs for panic disorder but none of the other vignettes, similar to the results found in existing research. However, other studies have shown female participants to under-rate the severity of GAD and SAD significantly more than male participants (Paulus et al., 2015), in contrast to the findings of the present study, in which female participants were more likely to view anxiety disorders as significantly impacting functioning.

The present study also found no gender differences in either perceived need for help or type of help suggested for anxiety disorders. Previous studies in adolescents have shown greater perceived need for help and consistently higher quality help-giving suggestions among female participants (Kelly et al., 2006; Kelly & Jorm, 2007; Byrne et al., 2015; Aluh et al., 2019), although the majority of these studies did not include anxiety disorders. It may be that because the overall quality of help-giving suggestions in this study were so low, or because males were relatively under-represented in the sample, that subtle differences in types of help-suggested may have been missed.

Clearly, far more research is needed into the role of gender in anxiety literacy, and in adolescent anxiety literacy in particular. Direct comparison between studies is difficult, due to the complexity of factors involved (different disorders, different components of MHL, different measures used across studies) but the results of the present study do tentatively support those of previous research that, in general, MHL is higher in females. Future research should attempt to clarify these findings further, examine nuanced differences in MHL based on gender across disorders and components of MHL, and attempt to investigate the processes underlying any gender differences in MHL.

### **7.9. Summary and Conclusions**

Overall, the results of the present study present a complex picture of how adolescents conceptualise and perceive symptoms of clinical anxiety disorders. Adolescents generally recognised that there was something wrong, with a majority of participants recognising that symptoms of anxiety disorders significantly impact on daily functioning, and expressing high levels of concern in general. The majority of participants believed that symptoms would not resolve in the short-term, although one in ten participants reported that the GAD and SAD vignette characters would feel better in one to two weeks. Additionally, a large majority of participants recognised the need for help from another person to cope in each of the three clinical vignettes. For all of these MHL items, there were significant differences between the clinical vignettes and the situational stress control, suggesting that participants are able to differentiate between clinical and non-clinical problems.

However, MHL was lower on other components. Specific recognition of disorders was extremely low for GAD and SAD, and low for panic disorder. That said, a significant proportion (between 22-44%) of participants did use anxiety-specific language when labelling the clinical vignettes, suggesting some level of recognition that the problem was anxiety-focused. Everyday stress and overthinking were by far the most commonly endorsed causes for anxiety disorders, while the

majority of participants disagreed that mental illness and chemical imbalance were causes of anxiety disorders; this suggests that participants are conceptualising anxiety disorders as products of either a temporary situation, or a personal tendency to “think too much”. The rejection of mental illness and chemical imbalance as causes suggest that adolescents do not perceive symptoms of clinical anxiety disorders to be indicative of mental illness, and imply a rejection of psychiatric and medical conceptualisations of anxiety that are prevalent in the literature and which emphasises multicausal explanations of anxiety disorders involving genetic, biological and environmental factors (Zwanzger & Deckert, 2010). MHL regarding knowledge of appropriate help was also low, with the overwhelming majority of help-giving suggestions focusing on informal help, with extremely low rates of suggestions for involving an adult or professional help. These results suggest that there may be a tendency to minimise or normalise symptoms of anxiety disorders; to view them as an extension of normal stress, that can be rectified with emotional support and distraction alone. This is concerning, given the established delay in help-seeking for anxiety disorders (Kasper, 2006; Johnson & Coles, 2013; Bellati et al., 2016). These results do not support the general hypothesis proposed in Chapter Two that anxiety literacy would be poor overall; rather they suggest a complex picture of adolescent anxiety literacy, with adolescents showing good understanding that symptoms of clinical anxiety disorders warrant concern and external help, are long-lasting, and have a negative impact on people experiencing them, but poor recognition, and poor knowledge of aetiology and appropriate help.

Panic disorder was consistently taken more seriously by participants across components of MHL than GAD or SAD, with significantly better recognition, significantly higher levels of concern, significantly worse perceived prognosis, significantly higher perceived need for help, and significantly higher rates of suggesting professional help. These results support the hypothesis proposed in Chapter Two, which based on previous research, expected that recognition would be low across all disorders, and that there would be a general preference for informal help, but that participants would express a significantly higher level of concern, greater recognition of the need

for help, and higher rates of suggestions for formal help for panic disorder than for GAD or SAD.

This may be because the symptoms of panic disorder – namely, panic attacks – are more immediately visible and alarming to peers than the symptoms of GAD and SAD. It may be the case that because the content of the worry present in GAD and SAD may be more pedestrian in nature, symptoms of these disorders may be more easily dismissed or written off as being normal, everyday stress. SAD, in particular, may also be more likely to be perceived as being the product of personality than the other two disorders. The majority of the effect sizes for how MHL varies by disorder were large, suggesting that type of anxiety disorder is important in the context of anxiety literacy, particularly in the case of perceived impact of symptoms, level of concern, perceived prognosis and beliefs about causality.

Overall, these results emphasise the importance of using comprehensive measures of MHL, as often the picture of understanding is nuanced; while specific “expert” knowledge such as specific psychiatric labels may be low, adolescents may still recognise symptoms of anxiety disorders as being a cause for concern, that require help.

### **7.10. Implications**

There is a dearth of research into anxiety literacy in general, and adolescent anxiety literacy in particular, and the present study takes a step toward addressing this research gap by comparing MHL across multiple anxiety disorders in an adolescent sample, and provides a preliminary picture of how adolescents respond to and conceptualise symptoms of clinical anxiety disorders in their peers. The results suggest that any potential interventions aiming at improving knowledge and understanding of anxiety disorders should focus particularly on ability to correctly identify the presence of a clinical problem, education about the aetiology of anxiety disorders, and in particular, education about mental health first aid and appropriate and effective help for anxiety disorders, with a focus on encouraging friends in distress to seek professional help. Future research should directly compare anxiety literacy to the MHL of other disorders, such as depression and



psychosis, as the inconsistency across studies makes drawing firm conclusions about differences in understanding across disorders difficult. This would give insights into whether and how adolescents conceptualise a wide range of mental illnesses differently, and allow researchers to examine if and why MHL may vary across components and disorder; identifying specific gaps in adolescent understanding and adding to the literature base. The present study demonstrated a tendency to minimise symptoms of some anxiety disorders relative to others, so it would be of interest to examine whether this pattern holds when other mental illnesses are included. This would help to further identify targets for future interventions aimed at improving MHL, particularly with regard to tailoring such programmes to focus on the components of MHL which are poorest for each disorder.

**8.1 Introduction**

This chapter aims to provide an overview of adolescents’ stigmatising responses toward clinical anxiety disorders by presenting the results of analyses examining three components of stigma; stereotypes, prejudice and discrimination, for three anxiety disorders (GAD, panic disorder and social anxiety disorder) and a non-clinical control (situational stress). The chapter will also outline results of analyses conducted to examine whether these components of stigma vary significantly depending on anxiety disorder.

**8.2 To what extent do adolescents endorse negative stereotypes for hypothetical peers with GAD, panic disorder and social anxiety disorder?**

This section will describe the level of endorsement of various stereotypes for GAD, panic disorder, and social anxiety disorder, and examine whether stereotype endorsement varies significantly across disorder.

Table 8.1 (below) summarises the frequencies, percentages, and descriptive statistics for all stereotype items.

Table 8.1. To what extent do adolescents endorse stereotypes for hypothetical peers displaying symptoms of GAD, panic disorder, and SAD? Reliability, frequencies, percentages, and descriptives for individual stereotype items.

GAD

Subscale	Item	Mean (SD)	Frequency and Percentages of Survey Responses					
			Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Missing
Weak-not-sick	People with a problem like X’s could snap out of it, if they wanted	2.26 (1.16)	75 (31%)	82 (33.9%)	44 (18.2%)	29 (12%)	12 (5%)	0 (0%)
	A problem like X’s is a sign of	2.12 (1.12)	93 (38.4%)	65 (26.9%)	47 (19.4%)	30 (12.4%)	5 (2.1%)	2 (0.8%)

	personal weakness								
<i>Dangerousness</i>	X's problem is not a real medical illness	2.12 (1.11)	88 (36.4%)	66 (27.3%)	54 (22.3%)	19 (7.9%)	8 (3.3%)	7 (2.9%)	
	People like X are unpredictable	2.97 (0.99)	23 (9.5%)	44 (18.2%)	90 (37.2%)	73 (30.2%)	5 (2.1%)	7 (2.9%)	
	People like X lack self-control	2.80 (1.07)	30 (12.4%)	67 (27.7%)	64 (26.4%)	69 (28.5%)	5 (2.1%)	7 (2.9%)	
	People like X are aggressive	2.54 (1.03)	40 (16.5%)	80 (33.1%)	76 (31.4%)	36 (14.9%)	7 (2.9%)	3 (1.2%)	
	People like X are frightening	2.10 (1.03)	77 (31.8%)	94 (38.8%)	44 (18.2%)	18 (7.4%)	7 (2.9%)	2 (0.8%)	
<i>Dependency</i>	People like X are dangerous	1.84 (0.90)	99 (40.9%)	92 (38%)	35 (14.5%)	9 (3.7%)	3 (1.2%)	4 (1.7%)	
	People like X are needy	2.35 (1.10)	65 (26.9%)	70 (28.9%)	60 (24.8%)	36 (14.9%)	5 (2.1%)	6 (2.5%)	
	People like X are dependent on others	2.77 (1.02)	28 (11.6%)	65 (26.9%)	88 (36.4%)	48 (19.8%)	9 (3.7%)	4 (1.7%)	
<i>Odd/Strange</i>	People like X are helpless	1.87 (0.92)	100 (41.3%)	84 (34.7%)	41 (16.9%)	11 (4.5%)	2 (0.8%)	4 (1.7%)	
	People like X are strange	1.56 (0.76)	138 (57%)	66 (27.3%)	29 (12%)	3 (1.2%)	0 (0%)	6 (2.5%)	
<i>Bad company</i>	People like X are different to other students	2.23 (1.08)	74 (30.6%)	72 (29.8%)	58 (24%)	28 (11.6%)	5 (2.1%)	5 (2.1%)	
	People like X are no fun to be around	1.75 (0.94)	122 (50.4%)	68 (28.1%)	34 (14%)	10 (4.1%)	3 (1.2%)	5 (2.1%)	
	People like X aren't good company	1.79 (1.03)	124 (51.2%)	65 (26.9%)	31 (12.8%)	13 (5.4%)	6 (2.5%)	3 (1.2%)	
<i>Attention-seeking</i>	People like X are just looking for attention	1.42 (0.75)	165 (68.2%)	54 (22.3%)	16 (6.6%)	1 (0.4%)	3 (1.2%)	3 (1.2%)	
	People like X are overly dramatic	1.63 (0.90)	143 (59.1%)	56 (23.1%)	28 (11.6%)	13 (5.4%)	0 (0%)	2 (0.8%)	
PANIC									
<i>Subscale</i>	Item	Mean (SD)	Frequency and Percentages of Survey Responses						
			<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither Agree nor Disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>	<b>Missing</b>	
<i>Weak-not-sick</i>	People with a problem like X's could snap out of it, if they wanted	1.61 (0.98)	140 (57.9%)	54 (22.3%)	14 (5.8%)	12 (5%)	5 (2.1%)	17 (7%)	
	A problem like X's is a sign of	1.84 (1.05)	117 (48.3%)	53 (21.9%)	34 (14%)	19 (7.9%)	3 (1.2%)	16 (6.6%)	

	personal weakness							
<i>Dangerousness</i>	X's problem is not a real medical illness	1.62 (0.92)	136 (56.2%)	54 (22.3%)	23 (9.5%)	9 (3.7%)	3 (1.2%)	17 (7%)
	People like X are unpredictable	2.44 (1.15)	64 (26.4%)	48 (19.8%)	66 (27.3%)	41 (16.9%)	5 (2.1%)	18 (7.4%)
	People like X lack self-control	2.28 (1.19)	77 (31.8%)	58 (24%)	46 (19%)	35 (14.5%)	8 (3.3%)	18 (7.4%)
	People like X are aggressive	1.67 (0.84)	117 (48.3%)	75 (31%)	27 (11.2%)	3 (1.2%)	3 (1.2%)	17 (7%)
	People like X are frightening	1.72 (0.98)	121 (50%)	67 (27.7%)	19 (7.9%)	14 (5.8%)	4 (1.7%)	17 (7%)
	People like X are dangerous	1.55 (0.72)	129 (53.3%)	73 (30.2%)	21 (8.7%)	3 (1.2%)	0 (0%)	16 (6.6%)
<i>Dependency</i>	People like X are needy	1.95 (1.05)	99 (40.9%)	63 (26%)	39 (16.1%)	18 (7.4%)	4 (1.7%)	19 (7.9%)
	People like X are dependent on others	2.36 (1.12)	64 (26.4%)	58 (24%)	67 (27.7%)	27 (11.2%)	8 (3.3%)	18 (7.4%)
	People like X are helpless	1.97 (1.04)	90 (37.2%)	77 (31.8%)	37 (15.3%)	13 (5.4%)	7 (2.9%)	18 (7.4%)
<i>Odd/Strange</i>	People like X are strange	1.53 (0.75)	131 (54.1%)	73 (30.2%)	16 (6.6%)	2 (0.8%)	2 (0.8%)	18 (7.4%)
	People like X are different to other students	2.21 (1.18)	81 (33.5%)	59 (24.4%)	42 (17.4%)	32 (13.2%)	7 (2.9%)	21 (8.7%)
<i>Bad company</i>	People like X are no fun to be around	1.62 (0.84)	125 (51.7%)	70 (28.9%)	19 (7.9%)	9 (3.7%)	1 (0.4%)	18 (7.4%)
	People like X aren't good company	1.56 (0.78)	131 (54.1%)	67 (27.7%)	20 (8.3%)	5 (2.1%)	1 (0.4%)	18 (7.4%)
<i>Attention-seeking</i>	People like X are just looking for attention	1.36 (0.63)	160 (66.1%)	50 (20.7%)	13 (5.4%)	0 (0%)	1 (0.4%)	18 (7.4%)
	People like X are overly dramatic	1.47 (0.80)	149 (61.6%)	56 (23.1%)	11 (4.5%)	5 (2.1%)	3 (1.2%)	18 (7.4%)
SAD								
<i>Subscale</i>	Item	Mean (SD)	Frequency and Percentages of Survey Responses					
			<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither Agree nor Disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>	<b>Missing</b>
<i>Weak-not-sick</i>	People with a problem like X's could snap out of it, if they wanted	1.88 (1.15)	110 (45.5%)	44 (18.2%)	24 (9.9%)	22 (9.1%)	6 (2.5%)	36 (14.9%)
	A problem like X's is a sign of personal weakness	2.25 (1.28)	80 (33.1%)	46 (19%)	37 (15.3%)	28 (11.6%)	13 (5.4%)	38 (15.7%)

<i>Dangerousness</i>	X's problem is not a real medical illness	2.11 (1.20)	84 (34.7%)	54 (22.3%)	38 (15.7%)	16 (6.6%)	12 (5%)	38 (15.7%)	
	People like X are unpredictable	2.00 (1.02)	83 (34.3%)	59 (24.4%)	43 (17.8%)	17 (7%)	2 (0.8%)	38 (15.7%)	
	People like X lack self-control	2.21 (1.17)	76 (31.4%)	52 (21.5%)	40 (16.5%)	32 (13.2%)	5 (2.1%)	37 (15.3%)	
	People like X are aggressive	1.60 (0.78)	114 (47.1%)	66 (27.3%)	19 (7.9%)	6 (2.5%)	0 (0%)	37 (15.3%)	
	People like X are frightening	1.57 (0.84)	126 (52.1%)	52 (21.5%)	20 (8.3%)	7 (2.9%)	1 (0.4%)	36 (14.9%)	
<i>Dependency</i>	People like X are dangerous	1.51 (0.75)	127 (52.5%)	54 (22.3%)	20 (8.3%)	2 (0.8%)	1 (0.4%)	38 (15.7%)	
	People like X are needy	1.93 (1.08)	98 (40.5%)	47 (19.4%)	40 (16.5%)	16 (6.6%)	4 (1.7%)	37 (15.3%)	
	People like X are dependent on others	2.22 (1.17)	75 (31%)	50 (20.7%)	39 (16.1%)	34 (14%)	4 (1.7%)	40 (16.5%)	
<i>Odd/Strange</i>	People like X are helpless	1.86 (1.02)	95 (39.3%)	63 (26%)	24 (9.9%)	17 (7%)	3 (1.2%)	40 (16.5%)	
	People like X are strange	1.64 (0.92)	118 (48.8%)	54 (22.3%)	16 (6.6%)	13 (5.4%)	1 (0.4%)	40 (16.5%)	
<i>Bad company</i>	People like X are different to other students	2.15 (1.23)	89 (36.8%)	40 (16.5%)	32 (13.2%)	36 (14.9%)	5 (2.1%)	40 (16.5%)	
	People like X are no fun to be around	1.74 (1.01)	113 (46.7%)	45 (18.6%)	29 (12%)	10 (4.1%)	4 (1.7%)	41 (16.9%)	
	People like X aren't good company	1.73 (1.00)	114 (47.1%)	47 (19.4%)	27 (11.2%)	12 (5%)	3 (1.2%)	39 (16.1%)	
<i>Attention-seeking</i>	People like X are just looking for attention	1.44 (0.72)	136 (56.2%)	48 (19.8%)	15 (6.2%)	4 (1.7%)	0 (0%)	39 (16.1%)	
	People like X are overly dramatic	1.62 (0.97)	129 (53.3%)	43 (17.8%)	15 (6.2%)	15 (6.2%)	2 (0.8%)	38 (15.7%)	
<b>STRESS</b>									
<i>Subscale</i>	Item	Mean (SD)	Frequency and Percentages of Survey Responses					Strongly Agree	Missing
			Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree			
<i>Weak-not-sick</i>	People with a problem like X's could snap out of it, if they wanted	2.25 (1.12)	69 (28.5%)	82 (33.9%)	41 (16.9%)	33 (13.6%)	7 (2.9%)	10 (4.1%)	
	A problem like X's is a sign of personal weakness	2.00 (0.97)	89 (36.8%)	72 (29.8%)	53 (21.9%)	16 (6.6%)	1 (0.4%)	11 (4.5%)	

<i>Dangerousness</i>	X's problem is not a real medical illness	3.07 (1.36)	41 (16.9%)	41 (16.9%)	48 (19.8%)	59 (24.4%)	40 (16.5%)	13 (5.4%)
	People like X are unpredictable	2.09 (0.97)	76 (31.4%)	80 (33.1%)	53 (21.9%)	20 (8.3%)	1 (0.4%)	12 (5%)
	People like X lack self-control	2.01 (0.96)	77 (31.8%)	96 (39.7%)	39 (16.1%)	13 (5.4%)	5 (2.1%)	12 (5%)
	People like X are aggressive	1.69 (0.80)	111 (45.9%)	87 (36%)	25 (10.3%)	6 (2.5%)	1 (0.4%)	12 (5%)
	People like X are frightening	1.62 (0.85)	128 (52.9%)	78 (32.2%)	14 (5.8%)	10 (4.1%)	2 (0.8%)	10 (4.1%)
<i>Dependency</i>	People like X are dangerous	1.49 (0.64)	135 (55.8%)	80 (33.1%)	15 (6.2%)	1 (0.4%)	0 (0%)	11 (4.5%)
	People like X are needy	2.03 (1.05)	90 (37.2%)	73 (30.2%)	43 (17.8%)	19 (7.9%)	5 (2.1%)	12 (5%)
	People like X are dependent on others	2.62 (1.14)	47 (19.4%)	60 (24.8%)	69 (28.5%)	46 (19%)	10 (4.1%)	10 (4.1%)
<i>Odd/Strange</i>	People like X are helpless	1.98 (1.10)	98 (40.5%)	72 (29.8%)	34 (14%)	18 (7.4%)	8 (3.3%)	12 (5%)
	People like X are strange	1.47 (0.65)	140 (57.9%)	74 (30.6%)	14 (5.8%)	2 (0.8%)	0 (0%)	12 (5%)
	People like X are different to other students	1.78 (0.91)	109 (45%)	80 (33.1%)	31 (12.8%)	9 (3.7%)	3 (1.2%)	10 (4.1%)
<i>Bad company</i>	People like X are no fun to be around	1.57 (0.78)	133 (55%)	71 (29.3%)	20 (8.3%)	5 (2.1%)	1 (0.4%)	12 (5%)
	People like X aren't good company	1.56 (0.78)	136 (56.2%)	67 (27.7%)	20 (8.3%)	7 (2.9%)	0 (0%)	12 (5%)
<i>Attention-seeking</i>	People like X are just looking for attention	1.40 (0.72)	162 (66.9%)	52 (21.5%)	11 (4.5%)	5 (2.1%)	1 (0.4%)	11 (4.5%)
	People like X are overly dramatic	1.61 (0.88)	137 (56.6%)	60 (24.8%)	26 (10.7%)	6 (2.5%)	3 (1.2%)	10 (4.1%)

**Note:** For ease of reading, “agree” below is used to discuss responses in either the “agree” or “strongly agree” categories, while “disagree” is used to discuss responses in either the “disagree” or “strongly disagree” categories.

### 8.2.1 To what extent do adolescents endorse negative stereotypes for GAD?

The majority (>60%) of participants disagree (either strongly disagree or disagree) with the WNS stereotype for GAD, but a sizeable proportion (between 11-17%) agree with it across the three items. A majority (>50%) of participants disagreed with the dangerousness stereotype for GAD;

agreement with this stereotype varied across the three items; less than 10% agree with the “frightening” and “dangerousness items”, but over 30% of participants agreed with the “unpredictable” and “lacks self-control” items, with just under one in five participants agreeing with the “aggressive” item. Disagreement for the dependency stereotype ranged from 38.5-76% across the three items, while agreement ranged from 5.3-23.5%.

Agreement with the odd/strange stereotype ranged from 1.2% for the “strange” item and 13.7% for the “different to other students” item, with a majority (>60%) disagreeing with both items. The majority of participants (>70%) disagreed or strongly disagreed that people with GAD were bad company or no fun to be around; 5.3% of participants agreed or strongly agreed that people with GAD were no fun to be around, while 7.9% agreed or strongly agreed that people with GAD are not good company. Finally, the majority (>70%) of participants disagreed with the attention-seeking stereotype items, with just 1.6% agreeing or strongly agreeing that people with GAD are just looking for attention, and 5.4% agreeing that people with GAD are overly dramatic.

#### *8.2.2 To what extent do adolescents endorse negative stereotypes for panic disorder?*

A large majority (>70%) of participants disagreed with the WNS stereotype for panic disorder, with agreement ranging from 4.9-9.1% across the three WNS items. Disagreement with the dangerousness stereotype for panic disorder ranged from 46.2-83.5% across the five items. Disagreement was lowest for the “unpredictable” item and highest for the “dangerous” item. Similarly, agreement was highest for the “unpredictable” item (19%) and lowest for the “dangerous” item (1.2%).

Over 50% of participants disagreed with the three items on the dependency subscale, but agreement ranged from 8.1-14.5% across the three items. The majority of participants (>50%) disagreed with the odd/strange stereotype for panic disorder, with agreement differing depending on the item; 1.6% agreed with the “strange” item, while 16.1% agreed with the “different to other students” item. A large majority (>80%) of participants disagreed with the bad company stereotype

for panic disorder, with agreement across the two items 4.1% for the “no fun to be around” item and 2.5% for the “aren’t good company” item.

Finally, a large majority (>80%) disagreed with the attention-seeking stereotype for panic disorder, with only 0.4% agreeing with the “just looking for attention” item, and 3.3% agreeing with the “overly dramatic” item.

### *8.2.3 To what extent do adolescents endorse negative stereotypes for social anxiety disorder?*

A majority (>50%) of participants disagreed with the WNS stereotype for SAD across the three items. Agreement with the WNS stereotype ranged from 11.6-17%. Disagreement with the dangerousness stereotype was high for SAD, with between 52.9-74.8% across the five items. Agreement with the dangerousness stereotype for SAD ranged from 1.2-15.3%, with agreement highest for the “lacks self-control” item and lowest for the “dangerous” item. Agreement with the dependency stereotype for SAD ranged from 8.2-15.7% across the three items, while disagreement with this stereotype was above 50% for all three items.

Agreement with the odd/strange stereotype for SAD was between 5.8-17% across the two items. Over 50% of participants disagreed with this stereotype for SAD across the two items. Over 60% of participants disagreed with the bad company stereotype for SAD across the two items, with agreement at 5.8% for the “no fun to be around” item and 6.2% for the “aren’t good company” item. Finally, a large majority (>70%) of participants disagreed with the attention-seeking stereotype for SAD across the two items, with agreement at only 1.7% for the “just looking for attention” item, and 7% for the “overly dramatic” item.

### *8.2.4 To what extent do adolescents endorse negative stereotypes for stress?*

The stereotype results for stress are recorded here for comparison purposes, as stress is not viewed as a mental illness. Agreement with the WNS stereotype for the situational stress scenario was relatively high, ranging from 7-40.9% across the three items, with agreement lowest for the



“could snap out of it if they wanted” item and highest for the “not a real medical illness” item.

Agreement with the dangerousness stereotype for stress was low, ranging from 0.4-8.7% across the five items, lowest for the “dangerous” item and highest for the “unpredictable” item.

Endorsement of the dependency stereotype for stress was relatively high, with agreement ranging from 10-23.1%.

Disagreement with the odd/strange stereotype for stress was high, with over 75% of participants disagreeing with this stereotype for stress across the two items. Similarly, over 80% of participants disagreed with the bad company stereotype for stress. Finally, over 80% of participants disagreed with the attention-seeking stereotype for stress, with less than 4% of participants agreeing with it across the two items.

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The items within each subscale were summed to produce a total score for each subscale. As the number of items in each stereotype subscale varied from two to five, mean scores on each subscale were generated in order to facilitate comparison of scores on each subscale (possible score of 1-5). Descriptive statistics (mean and SD) were then performed on these mean scores.

These are contained in Table 8.2, below

Table 8.2. To what extent do adolescents endorse stereotypes for anxiety disorders? Descriptive statistics (mean (SD)) for stereotype subscales.

	GAD	PANIC	SAD	STRESS
<i>Weak not sick</i>	2.15 (0.88)	1.70 (0.81)	2.08 (1.01)	2.44 (0.82)
<i>Dangerousness</i>	2.46 (0.68)	1.92 (0.72)	1.77 (0.72)	1.78 (0.67)
<i>Dependency</i>	2.34 (0.76)	2.09 (0.85)	2.00 (0.87)	2.20 (0.87)
<i>Odd/strange</i>	1.89 (0.76)	1.86 (0.81)	1.89 (0.94)	1.62 (0.67)
<i>Bad company</i>	1.78 (0.92)	1.59 (0.76)	1.74 (0.96)	1.55 (0.70)
<i>Attention-seeking</i>	1.52 (0.72)	1.41 (0.65)	1.52 (0.77)	1.50 (0.72)

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Overall, the majority of participants did not explicitly agree with negative stereotypes, across anxiety disorders. However, a sizeable minority (10-20%) did explicitly agree with a number of the

stereotypes toward people with anxiety disorders; the WNS, dependency, and odd/strange stereotypes in particular. Additionally, while the dangerousness stereotype was generally not endorsed by participants with regard to anxiety disorders, agreement with the “unpredictable” and “lacks self-control” items within the dangerousness subscale were relatively high, particularly for GAD.

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### **8.2.5 Does endorsement of negative stereotypes vary significantly across anxiety disorders?**

Skewness and kurtosis values for the stereotype variables were within normal range (+/- 2). Repeated-measures ANOVAs were used to examine whether stereotype endorsement differed significantly across anxiety disorders.

#### *8.2.5.1. Does WNS endorsement differ significantly across anxiety disorders?*

A repeated-measures ANOVA showed a significant effect of vignette condition on endorsement of the WNS stereotype;  $F(3, 567) = 47.69, p < 0.01, \eta^2 = 0.201$ . Pairwise comparisons with Bonferroni correction showed that participants were significantly more likely to endorse the WNS stereotype for GAD and social anxiety disorder than for panic disorder ( $p < 0.01$ ). Additionally, participants were significantly more likely to endorse the WNS stereotype for the control scenario, situational stress, than for any of the three clinical vignettes ( $p < 0.01$ ).

#### *8.2.5.2. Does endorsement of the Dangerousness stereotype differ significantly across anxiety disorders?*

A repeated-measures ANOVA showed a significant effect of vignette condition on endorsement of the dangerousness stereotype;  $F(3, 570) = 76.16, p < 0.01, \eta^2 = 0.286$ . Pairwise comparisons with Bonferroni correction showed that endorsement of the dangerousness stereotype was significantly higher for GAD than for panic disorder, social anxiety disorder, or stress ( $p < 0.01$ ). Endorsement of

the dangerousness stereotype was also significantly higher for panic disorder than for social anxiety disorder ( $p < 0.01$ ).

#### *8.2.5.3. Does endorsement of the Dependency stereotype differ significantly across anxiety disorders?*

A repeated-measures ANOVA with Greenhouse-Geisser correction showed a significant effect of vignette condition on endorsement of the dependency stereotype;  $F(2.73, 531.09) = 13.38$ ,  $p < 0.01$ ,  $\eta^2 = 0.064$ . Specifically, pairwise comparisons with Bonferroni correction showed that endorsement of the dependency stereotype was significantly higher for GAD than for either panic disorder or social anxiety disorder ( $p < 0.01$ ). No significant difference was found between GAD and stress. Additionally, social anxiety disorder had significantly lower levels of endorsement for the dependency subscale than stress ( $p < 0.01$ ).

#### *8.2.5.4. Does endorsement of the Odd/strange stereotype differ significantly across anxiety disorders?*

A repeated-measures ANOVA with Greenhouse-Geisser correction showed a significant effect of vignette condition on endorsement of the odd/strange stereotype;  $F(2.88, 559.58) = 8.27$ ,  $p < 0.01$ ,  $\eta^2 = 0.041$ . Pairwise comparisons with Bonferroni correction showed that endorsement of the odd/strange stereotype was significantly lower for the stress vignette than for any of the three clinical vignettes ( $p < 0.01$ ). No significant differences in endorsement of the odd/strange stereotype were found between GAD, panic disorder and social anxiety disorder.

#### *8.2.5.5. Does endorsement of the Bad company stereotype differ significantly across anxiety disorders?*

A repeated-measures ANOVA with Greenhouse-Geisser correction showed a significant effect of vignette condition on endorsement of the “bad company” stereotype;  $F(2.78, 545.28) = 4.60$ ,

$p < 0.01$ ,  $\eta^2 = 0.023$ . Pairwise comparisons with Bonferroni correction showed that endorsement of the bad company stereotype was significantly higher for GAD than for panic disorder ( $p < 0.01$ ). No other significant differences between vignettes were found.

*8.2.5.6. Does endorsement of the Attention-seeking stereotype differ significantly across anxiety disorders?*

No significant effect of vignette condition was found for endorsement of the attention-seeking stereotype using a repeated-measures ANOVA with Greenhouse-Geisser correction;  $F(2.81, 565.30) = 2.32$ ,  $p > 0.05$ ).

### 8.3 To what extent do adolescents display prejudicial responses toward hypothetical peers with GAD, panic disorder, and social anxiety disorder?

This section will describe the level of prejudicial responses by adolescents toward hypothetical peers with GAD, panic disorder, and social anxiety disorder. It will then examine whether level of prejudice displayed by participants varied significantly by disorder.

Table 8.3 below summarises the frequencies, percentages and descriptive statistics relating to all prejudice items.

Table 8.3. To what extent do adolescents display prejudice toward hypothetical peers displaying symptoms of GAD, panic disorder and SAD? Reliability, frequencies, percentages, and descriptives.

#### GAD

Subscale	Item	Mean (SD)	Frequency and Percentages of Survey Responses					
			Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Missing
Anger	X's behaviour makes me feel angry	1.64 (0.80)	124 (51.2%)	86 (35.5%)	23 (9.5%)	6 (2.5%)	1 (0.4%)	2 (0.8%)
	X's behaviour makes me feel irritated	1.75 (0.95)	123 (50.8%)	74 (30.6%)	26 (10.7%)	14 (5.8%)	3 (1.2%)	2 (0.8%)
Pity	I would make fun of X	1.26 (0.73)	202 (83.5%)	25 (10.3%)	5 (2.1%)	4 (1.7%)	4 (1.7%)	2 (0.8%)
	X's behaviour makes me feel sorry for [them]	3.58 (1.02)	15 (6.2%)	14 (5.8%)	62 (25.6%)	113 (46.7%)	34 (14%)	4 (1.7%)
	I want to help X with [their] problem	4.31 (0.75)	3 (1.2%)	3 (1.2%)	15 (6.2%)	115 (47.5%)	104 (43%)	2 (0.8%)
Fear	I understand how X feels	3.99 (1.10)	7 (2.9%)	24 (9.9%)	30 (12.4%)	81 (33.5%)	97 (40.1%)	3 (1.2%)
	X's behaviour makes me feel uneasy	2.24 (1.00)	60 (24.8%)	95 (39.3%)	52 (21.5%)	30 (12.4%)	2 (0.8%)	3 (1.2%)
	X's behaviour makes me feel afraid	1.80 (0.93)	116 (47.9%)	71 (29.3%)	41 (16.9%)	9 (3.7%)	3 (1.2%)	2 (0.8%)

	X's behaviour makes me feel insecure	1.79 (0.90)	114 (47.1%)	77 (31.8%)	37 (15.3%)	13 (5.4%)	0 (0%)	1 (0.4%)
PANIC								
<i>Subscale</i>	Item	Mean (SD)	Frequency and Percentages of Survey Responses					
			<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither Agree nor Disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>	<b>Missing</b>
<i>Anger</i>	X's behaviour makes me feel angry	1.52 (0.86)	143 (59.1%)	56 (23.1%)	15 (6.2%)	3 (1.2%)	5 (2.1%)	20 (8.3%)
	X's behaviour makes me feel irritated	1.52 (0.82)	140 (57.9%)	57 (23.6%)	17 (7%)	4 (1.7%)	3 (1.2%)	21 (8.7%)
	I would make fun of X	1.27 (0.64)	177 (73.1%)	28 (11.6%)	11 (4.5%)	2 (0.8%)	1 (0.4%)	23 (9.5%)
<i>Pity</i>	X's behaviour makes me feel sorry for [them]	3.55 (1.36)	29 (12%)	22 (9.1%)	32 (13.2%)	72 (29.8%)	65 (26.9%)	22 (9.1%)
	I want to help X with [their] problem	4.16 (0.98)	8 (3.3%)	8 (3.3%)	18 (7.4%)	91 (37.6%)	94 (38.8%)	23 (9.5%)
	I understand how X feels	3.37 (1.30)	19 (7.9%)	44 (18.2%)	46 (19%)	52 (21.5%)	55 (22.7%)	26 (10.7%)
<i>Fear</i>	X's behaviour makes me feel uneasy	2.00 (1.07)	89 (36.8%)	65 (26.9%)	40 (16.5%)	16 (6.6%)	6 (2.5%)	26 (10.7%)
	X's behaviour makes me feel afraid	1.86 (1.07)	110 (45.5%)	62 (25.6%)	26 (10.7%)	17 (7%)	6 (2.5%)	21 (8.7%)
	X's behaviour makes me feel insecure	1.64 (0.84)	121 (50%)	65 (26.9%)	27 (11.2%)	6 (2.5%)	1 (0.4%)	22 (9.1%)
SAD								
<i>Subscale</i>	Item	Mean (SD)	Frequency and Percentages of Survey Responses					
			<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither Agree nor Disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>	<b>Missing</b>
<i>Anger</i>	X's behaviour makes me feel angry	1.51 (0.78)	126 (52.1%)	55 (22.7%)	14 (5.8%)	5 (2.1%)	1 (0.4%)	41 (16.9%)
	X's behaviour makes me feel irritated	1.56 (0.87)	124 (51.2%)	52 (21.5%)	12 (5%)	9 (3.7%)	2 (0.8%)	43 (17.8%)
	I would make fun of X	1.33 (0.73)	152 (62.8%)	34 (14%)	4 (1.7%)	5 (2.1%)	2 (0.8%)	45 (18.6%)
<i>Pity</i>	X's behaviour makes me	3.26 (1.41)	38 (15.7%)	18 (7.4%)	40 (16.5%)	58 (24%)	44 (18.2%)	44 (18.2%)

	feel sorry for [them]								
	I want to help X with [their] problem	4.07 (1.09)	11 (4.5%)	7 (2.9%)	25 (10.3%)	71 (29.3%)	85 (35.1%)	43 (17.8%)	
	I understand how X feels	3.79 (1.30)	17 (7%)	21 (8.7%)	26 (10.7%)	57 (23.6%)	77 (31.8%)	44 (18.2%)	
<i>Fear</i>	X's behaviour makes me feel uneasy	1.97 (1.07)	87 (36%)	52 (21.5%)	40 (16.5%)	13 (5.4%)	5 (2.1%)	45 (18.6%)	
	X's behaviour makes me feel afraid	1.63 (0.86)	112 (46.3%)	54 (22.3%)	22 (9.1%)	7 (2.9%)	1 (0.4%)	46 (19%)	
	X's behaviour makes me feel insecure	1.76 (1.02)	105 (43.4%)	55 (22.7%)	23 (9.5%)	8 (3.3%)	6 (2.5%)	45 (18.6%)	
STRESS									
<i>Subscale</i>	Item	Mean (SD)	Frequency and Percentages of Survey Responses						
			<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither Agree nor Disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>	<b>Missing</b>	
<i>Anger</i>	X's behaviour makes me feel angry	1.69 (0.89)	121 (50%)	78 (32.2%)	21 (8.7%)	9 (3.7%)	3 (1.2%)	10 (4.1%)	
	X's behaviour makes me feel irritated	1.65 (0.88)	127 (52.5%)	74 (30.6%)	20 (8.3%)	8 (3.3%)	3 (1.2%)	10 (4.1%)	
	I would make fun of X	1.30 (0.63)	172 (71.1%)	43 (17.8%)	6 (2.5%)	3 (1.2%)	1 (0.4%)	17 (7%)	
<i>Pity</i>	X's behaviour makes me feel sorry for [them]	3.52 (1.17)	18 (7.4%)	28 (11.6%)	45 (18.6%)	91 (37.6%)	46 (19%)	14 (5.8%)	
	I want to help X with [their] problem	4.06 (0.98)	9 (3.7%)	9 (3.7%)	23 (9.5%)	108 (44.6%)	81 (33.5%)	12 (5%)	
	I understand how X feels	3.48 (1.19)	15 (6.2%)	37 (15.3%)	52 (21.5%)	74 (30.6%)	51 (21.1%)	13 (5.4%)	
<i>Fear</i>	X's behaviour makes me feel uneasy	2.00 (0.95)	79 (32.6%)	91 (37.6%)	41 (16.9%)	15 (6.2%)	3 (1.2%)	13 (5.4%)	
	X's behaviour makes me feel afraid	1.73 (0.86)	111 (45.9%)	83 (34.3%)	23 (9.5%)	13 (5.4%)	0 (0%)	12 (5%)	
	X's behaviour makes me feel insecure	1.68 (0.88)	122 (50.4%)	75 (31%)	22 (9.1%)	10 (4.1%)	2 (0.8%)	11 (4.5%)	

*8.3.1 To what extent do adolescents display prejudicial responses toward a hypothetical peer with GAD?*

Levels of anger toward GAD were low, with agreement at only 2.9-7% of participants across the three items on the anger subscale, and disagreement above 80% for all three anger items.

Similarly, fear reported in response to GAD was relatively low, with agreement of between 4.9-13.2% across the three items, and disagreement above 60% for all three fear items. Over 60% of participants agreed with all three of the pity items, while disagreement ranged from 2.4-12.8% across the three pity items.

*8.3.2 To what extent do adolescents display prejudicial responses toward a hypothetical peer with panic disorder?*

Levels of anger expressed toward panic disorder were low, with agreement below 4% and disagreement above 80% across all three anger items. Levels of fear toward the panic disorder vignette were also relatively low, with disagreement above 60% and agreement between 2.9-9.5% across the three items on the fear subscale. Levels of pity toward panic disorder were relatively high, with agreement of between 44.2-76.4% across the three pity items. Disagreement across the three pity items ranged from 6.6-26.1%.

*8.3.3 To what extent do adolescents display prejudicial responses toward a hypothetical peer with social anxiety disorder?*

Levels of anger toward SAD were low, with disagreement above 70% for all three anger items. Similarly, disagreement was above 50%, and agreement ranging from 3.3-7.5% across the three items on the fear subscale. Agreement across the three items on the pity subscale was between 42.2-64.4%, with disagreement below 25% for all three pity items.



*8.3.4 To what extent do adolescents display prejudicial responses toward a hypothetical peer experiencing situational stress?*

Anger toward the character in the stress vignette was low, with agreement below 5%, and disagreement above 80% for all three anger items. Fear was also low, with agreement between 4.9-7.4%, and disagreement above 70% for all three fear items. Finally, pity was relatively high, with agreement above 50% for the three pity items, while disagreement was between 7.4-21.5% across the pity subscale.

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Generally, prejudice toward people with anxiety disorders was low among our sample, with the majority of participants reporting low levels of anger and fear, and relatively high levels of pity across anxiety disorders. However, a minority of participants did express prejudicial responses, for example, agreement was between 4.9-13.2% across the fear subscale for GAD. Additionally, low levels of pity were reported by a relatively large minority of the sample, with disagreement of between 6.6-26.1% across the pity subscale for panic disorder, and 7.4-23.1% for SAD.

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### 8.3.5 Does level of prejudice displayed by adolescents vary significantly across anxiety disorders?

The items on each prejudice subscale were summed to produce a total score (5-15) for each subscale. Higher scores indicated greater levels of anger and fear. The pity items were reverse scored, so that higher scores indicated less pity (i.e., more prejudice). Descriptive statistics (mean and SD) for each prejudice subscale are outlined in Table 8.4 below.

Table 8.4. To what extent do adolescents display prejudicial responses toward a hypothetical peer with an anxiety disorder? Descriptive statistics (mean (SD)) for prejudice subscales.

	GAD	PANIC	SAD	STRESS
<i>Anger</i>	4.65 (1.95)	4.27 (2.03)	4.37 (2.03)	4.61 (2.07)
<i>Pity</i>	6.11 (1.91)	6.91 (2.48)	6.87 (2.85)	6.90 (2.35)
<i>Fear</i>	5.82 (2.32)	5.50 (2.46)	5.35 (2.62)	5.40 (2.31)

#### 8.3.5.1. Does level of anger vary significantly across anxiety disorders?

A repeated-measures ANOVA showed a significant effect of vignette condition on level of anger reported by participants;  $F(3, 564) = 5.398, p < 0.01, \eta^2 = 0.028$ . Pairwise comparisons with Bonferroni correction showed that level of anger was significantly lower for panic disorder than for either GAD or stress ( $p < 0.01$ ). No other significant differences between vignettes were found.

#### 8.3.5.2. Does level of pity vary significantly across anxiety disorders?

A repeated-measures ANOVA with Greenhouse-Geisser correction showed a significant effect of vignette condition on level of pity;  $F(2.72, 490.39) = 8.87, p < 0.01, \eta^2 = 0.047$ . Specifically, pairwise comparisons with Bonferroni correction showed that levels of pity were significantly higher for GAD than for either of the other two clinical vignettes (panic disorder and social anxiety disorder), or stress ( $p < 0.01$ ).

#### 8.3.5.3. Does level of fear vary significantly across anxiety disorders?

No significant effect of vignette condition on level of fear was found using a repeated-measures ANOVA with Greenhouse-Geisser correction;  $F(2.70, 506.86) = 2.70, p > 0.05$ .

**8.4 To what extent do adolescents express a desire for social distance from a hypothetical peer with GAD, panic disorder, and social anxiety disorder (i.e., discrimination)?**

This section will describe the level of discrimination, in the form of desired social distance, recorded by adolescents toward hypothetical peers with GAD, panic disorder and social anxiety disorder. It will also explore whether level of discrimination varies significantly across anxiety disorder.

Table 8.5 below summarises the frequencies, percentages and descriptive statistics relating to all social distance scale items.

The social distance scale used in this study used a 1-4 Likert scale examining participants' willingness to engage in various activities with a hypothetical peer (where 1 = definitely unwilling, and 4= definitely willing). The two middle values, 2 and 3 were left unlabelled (see Table 8.5).

Table 8.5. To what extent do adolescents express a desire for social distance from hypothetical peers displaying symptoms of GAD, panic disorder, and SAD? (Expressed in the form of willingness/unwillingness to engage in specific activities with the hypothetical peers). Frequencies, percentages, and descriptives.

*GAD*

<i>Social Distance Scale</i>	Mean (SD)	Frequency and Percentages of Survey Responses				
		<b>Definitely Unwilling (1)</b>	<b>(2)</b>	<b>(3)</b>	<b>Definitely Willing (4)</b>	<b>Missing</b>
<i>To go to X's house after school</i>	3.15 (0.84)	9 (3.7%)	41 (16.9%)	94 (38.8%)	95 (39.3%)	3 (1.2%)
<i>To invite X to your house after school</i>	3.22 (0.85)	8 (3.3%)	41 (16.9%)	80 (33.1%)	110 (45.5%)	3 (1.2%)
<i>Work on a school project with X</i>	3.32 (0.87)	13 (5.4%)	25 (10.3%)	74 (30.6%)	128 (52.9%)	2 (0.8%)
<i>Spend time with X at the weekend</i>	3.32 (0.83)	11 (4.5%)	22 (9.1%)	84 (34.7%)	121 (50%)	4 (1.7%)
<i>Have X date your best friend</i>	2.44 (1.01)	50 (20.7%)	72 (29.8%)	72 (29.8%)	40 (16.5%)	8 (3.3%)
<i>Have it become general knowledge that you and X are good friends</i>	3.45 (0.73)	7 (2.9%)	13 (5.4%)	85 (35.1%)	133 (55%)	4 (1.7%)
<i>PANIC</i>						
<i>Social Distance Scale</i>		Frequency and Percentages of Survey Responses				

	Mean (SD)	Definitely Unwilling (1)	(2)	(3)	Definitely Willing (4)	Missing
<i>To go to X's house after school</i>	3.31 (0.90)	13 (5.4%)	26 (10.7%)	62 (25.6%)	120 (49.6%)	21 (8.7%)
<i>To invite X to your house after school</i>	3.28 (0.86)	10 (4.1%)	29 (12%)	70 (28.9%)	111 (45.9%)	22 (9.1%)
<i>Work on a school project with X</i>	3.40 (0.86)	11 (4.5%)	21 (8.7%)	58 (24%)	130 (53.7%)	22 (9.1%)
<i>Spend time with X at the weekend</i>	3.31 (0.89)	11 (4.5%)	28 (11.6%)	62 (25.6%)	119 (49.2%)	22 (9.1%)
<i>Have X date your best friend</i>	2.58 (1.13)	52 (21.5%)	48 (19.8%)	59 (24.4%)	60 (24.8%)	23 (9.5%)
<i>Have it become general knowledge that you and X are good friends</i>	3.44 (0.82)	11 (4.5%)	14 (5.8%)	63 (26%)	133 (55%)	21 (8.7%)

SAD

<i>Social Distance Scale</i>	Mean (SD)	Frequency and Percentages of Survey Responses				
		Definitely Unwilling (1)	(2)	(3)	Definitely Willing (4)	Missing
<i>To go to X's house after school</i>	3.29 (0.94)	16 (6.6%)	18 (7.4%)	55 (22.7%)	108 (44.6%)	45 (18.6%)
<i>To invite X to your house after school</i>	3.26 (0.95)	15 (6.2%)	24 (9.9%)	53 (21.9%)	105 (43.4%)	45 (18.6%)
<i>Work on a school project with X</i>	3.37 (0.88)	10 (4.1%)	23 (9.5%)	48 (19.8%)	117 (48.3%)	44 (18.2%)
<i>Spend time with X at the weekend</i>	3.30 (0.92)	13 (5.4%)	23 (9.5%)	52 (21.5%)	109 (45%)	45 (18.6%)
<i>Have X date your best friend</i>	2.79 (1.09)	30 (12.4%)	52 (21.5%)	45 (18.6%)	70 (28.9%)	45 (18.6%)
<i>Have it become general knowledge that you and X are good friends</i>	3.40 (0.87)	12 (5%)	14 (5.8%)	54 (22.3%)	118 (48.8%)	44 (18.2%)

STRESS

<i>Social Distance Scale</i>	Mean (SD)	Frequency and Percentages of Survey Responses				
		Definitely Unwilling (1)	(2)	(3)	Definitely Willing (4)	Missing
<i>To go to X's house after school</i>	3.21 (0.90)	12 (5%)	39 (16.1%)	68 (28.1%)	111 (45.9%)	12 (5%)
<i>To invite X to your house after school</i>	3.40 (0.82)	8 (3.3%)	25 (10.3%)	64 (26.4%)	133 (55%)	12 (5%)
<i>Work on a school project with X</i>	3.49 (0.80)	9 (3.7%)	17 (7%)	57 (23.6%)	148 (61.2%)	11 (4.5%)
<i>Spend time with X at the weekend</i>	3.52 (0.70)	5 (2.1%)	13 (5.4%)	69 (28.5%)	143 (59.1%)	12 (5%)
<i>Have X date your best friend</i>	2.72 (1.06)	38 (15.7%)	56 (23.1%)	68 (28.1%)	68 (28.1%)	12 (5%)

<i>Have it become general knowledge that you and X are good friends</i>	3.53 (0.72)	6 (2.5%)	13 (5.4%)	63 (26%)	147 (60.7%)	13 (5.4%)
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*8.4.1 What is the level of discrimination displayed by adolescents toward a hypothetical peer with GAD?*

Participants responded that they were “definitely willing” to engage in activities with the hypothetical peer with GAD at rates of between 16.5-55% across the social distance scale, and were “definitely unwilling” to engage at rates of between 2.9-20.7%.

*8.4.2 What is the level of discrimination displayed by adolescents toward a hypothetical peer with panic disorder?*

Participants responded that they were “definitely willing” to engage in activities with the hypothetical peer with panic disorder at rates of between 24.8-55% across the social distance scale, and were “definitely unwilling” to engage at rates of between 4.1-21.5%.

*8.4.3 What is the level of discrimination displayed by adolescents toward a hypothetical peer with social anxiety disorder?*

Participants responded that they were “definitely willing” to engage in activities with the hypothetical peer with SAD at rates of between 28.9-48.8% across the social distance scale, and were “definitely unwilling” to engage at rates of between 4.1-12.4%. However, it must be noted that 18% of participants did not answer the social distance measure for the SAD vignette, most likely due to time constraints, as this was the end of the survey.

*8.4.4 What is the level of discrimination displayed by adolescents toward a hypothetical peer experiencing situational stress?*

Participants responded that they were “definitely willing” to engage in activities with the hypothetical peer experiencing stress at rates of between 28.1-61.2% across the social distance scale, and were “definitely unwilling” to engage at rates of between 2.1-15.7%.

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**8.4.5 Does the level of desired social distance (i.e., discrimination) displayed by adolescents vary significantly across anxiety disorders?**

The six items on the social distance scale were reverse-scored, and then summed to produce a total social distance score, with a possible score of between 4-24, where higher scores indicated a higher desire for social distance. Descriptive statistics (mean and SD) for the social distance scale are shown in Table 8.6 below.

Table 8.6. What is the level of discrimination displayed by adolescents toward people with anxiety disorders? Descriptive statistics (mean (SD)) for the social distance scale.

	GAD	PANIC	SAD	STRESS
<i>Social Distance</i>	11.03 (3.86)	10.65 (4.27)	10.56 (4.72)	10.12 (3.88)

A repeated-measures ANOVA with Greenhouse-Geisser correction showed a significant effect of vignette condition on level of desired social distance;  $F(2.71, 501.30) = 5.53, p < 0.01, \eta^2 = 0.029$ .

Specifically, pairwise comparisons with Bonferroni correction showed that level of desired social distance was significantly higher for GAD and panic disorder than for stress ( $p < 0.05$ ). No significant difference in desired social distance was found between social anxiety disorder and stress, or between any of the clinical vignettes.

## 8.5. Gender differences in stigmatising responses toward people with anxiety disorders

This section will discuss gender differences in stigma found. The scale data were analysed using t-tests where skewness and kurtosis values for the item fell between -2 and +2 (examined separately for males and females). Where skewness and kurtosis values fell outside the normal range, data were analysed using the non-parametric equivalent, the Mann-Whitney U test.

### 8.5.1. Gender differences in endorsement of stereotypes

As there were six items relating to stereotypes, the significance level was set at 0.008 (0.05/6) to adjust for multiple comparisons (Bonferroni correction). Independent-samples t-tests and Mann-Whitney U tests found significant gender differences in endorsement of the dangerousness, strange/different, bad company and attention-seeking stereotypes for GAD. Males were significantly more likely than females to agree with the dangerousness ( $t(227) = 4.528, p < 0.008$ , Hedges'  $g = 0.63$ ), odd/strange ( $t(229) = 3.773, p < 0.008$ , Hedges'  $g = 0.54$ ), bad company ( $U = 3911, p < 0.008$ ) and attention-seeking stereotypes ( $U = 3448.5, p < 0.008$ ).

With regard to panic disorder, independent-samples t-tests and Mann-Whitney U tests showed significant gender differences in endorsement of the strange/different, bad company and attention-seeking stereotypes. Males had significantly higher levels of endorsement than females for the odd/strange ( $t(215) = 3.598, p < 0.008$ , Hedges'  $g = 0.53$ ), bad company ( $U = 3902.5, p < 0.008$ ) and attention-seeking stereotypes ( $t(96.558) = 3.650, p < 0.008$ , Hedges'  $g = 0.62$ ) for panic disorder. No significant gender differences in endorsement of the WNS, dangerousness or dependency stereotypes were found for panic disorder.

Significant gender differences in endorsement of all stereotypes other than the WNS and dependency stereotypes were found for SAD. Again, males showed significantly higher levels of stereotype endorsement than females in each case; dangerousness ( $t(198) = 4.347, p < 0.008$ , Hedges'  $g = 0.66$ ), odd/strange ( $t(92.318) = 4.755, p < 0.008$ , Hedges'  $g = 0.82$ ), bad company ( $t(91.351) = 3.534, p < 0.008$ , Hedges'  $g = 0.60$ ) and attention-seeking ( $U = 2903.5, p < 0.008$ ).



No significant gender differences in stereotype endorsement were found for the stress vignette.

Descriptive statistics are outlined in Table 8.7 below.

### 8.5.2. Prejudice

As there were three items relating to prejudice, the significance level was set at 0.016 (0.05/3) to adjust for multiple comparisons (Bonferroni correction). Significant gender differences in levels of prejudice were found for all three clinical vignettes, across the three subscales; anger, pity and fear. Significant gender differences were also found for the situational stress vignette, but only for the anger subscale. Specifically, males had higher levels of anger than females for GAD ( $t(235) = 3.373, p < 0.016$ , Hedges'  $g = 0.47$ ), panic disorder ( $U=3088.5, p < 0.016$ ), SAD ( $t(73.893) = 3.38, p < 0.016$ , Hedges'  $g = 0.64$ ) and situational stress ( $t(98.891) = 2.473, p < 0.016$ , Hedges'  $g = 0.40$ ). Females had significantly higher levels of pity than males for GAD ( $U=4273, p < 0.016$ ), panic disorder ( $t(207) = 3.45, p < 0.016$ , Hedges'  $g = 0.51$ ) and SAD ( $t(190) = 2.978, p < 0.016$ , Hedges'  $g = 0.47$ ). Males had significantly higher levels of fear than females for GAD ( $t(234) = 2.809, p < 0.016$ , Hedges'  $g = 0.39$ ), panic disorder ( $t(211) = 3.454, p < 0.016$ , Hedges'  $g = 0.51$ ), and SAD ( $t(81.173) = 3.396, p < 0.016$ , Hedges'  $g = 0.61$ ). Descriptive statistics are outlined in Table 8.7 below.

### 8.5.3. Discrimination (desired social distance)

Independent-samples t-tests and Mann-Whitney U tests showed significant gender differences in desired social distance for the three clinical vignettes, but no significant gender difference for the situational stress vignette. Males reported significantly higher levels of desired social distance than females for GAD ( $t(108.806) = 3.862, p < 0.05$ , Hedges'  $g = 0.62$ ), panic disorder ( $U=3598, p < 0.05$ ), and SAD ( $t(79.154) = 2.733, p < 0.05$ , Hedges'  $g = 0.49$ ). Descriptive statistics are outlined in Table 8.7 below.

Table 8.7. Stereotypes, prejudice and desired social distance. Descriptive statistics by gender (mean (SD)).

<b>Stereotypes</b>		GAD	PANIC	SAD	STRESS
<i>Weak not sick</i>	Male	2.33 (0.91)	1.83 (0.87)	2.18 (0.95)	2.59 (0.80)
	Female	2.07 (0.86)	1.62 (0.77)	2.05 (1.04)	2.39 (0.83)
<i>Dangerousness</i>	Male	2.74 (0.62)	2.05 (0.79)	2.08 (0.72)	1.94 (0.71)
	Female	2.32 (0.68)	1.85 (0.67)	1.63 (0.66)	1.69 (0.63)
<i>Dependency</i>	Male	2.39 (0.73)	2.23 (0.86)	2.19 (0.84)	2.38 (0.83)
	Female	2.31 (0.78)	2.02 (0.85)	1.91 (0.86)	2.11 (0.88)
<i>Odd/strange</i>	Male	2.16 (0.85)	2.13 (0.83)	2.39 (1.05)	1.77 (0.65)
	Female	1.76 (0.69)	1.72 (0.75)	1.67 (0.80)	1.54 (0.65)
<i>Bad company</i>	Male	2.14 (0.98)	1.80 (0.77)	2.11 (1.06)	1.71 (0.74)
	Female	1.61 (0.85)	1.48 (0.73)	1.56 (0.85)	1.47 (0.65)
<i>Attention-seeking</i>	Male	1.91 (0.79)	1.66 (0.79)	1.84 (0.87)	1.69 (0.79)
	Female	1.34 (0.60)	1.28 (0.53)	1.37 (0.67)	1.41 (0.66)
<b>Prejudice</b>		GAD	PANIC	SAD	STRESS
<i>Anger</i>	Male	5.26 (1.98)	5.24 (2.59)	5.21 (2.54)	5.15 (2.42)
	Female	4.37 (1.83)	3.79 (1.48)	3.98 (1.62)	4.34 (1.80)
<i>Pity*</i>	Male	6.74 (2.16)	7.72 (2.18)	7.73 (3.01)	6.96 (2.18)
	Female	5.80 (1.70)	6.48 (2.51)	6.43 (2.63)	6.88 (2.41)
<i>Fear</i>	Male	6.43 (2.02)	6.32 (2.51)	6.41 (3.06)	5.88 (2.34)
	Female	5.53 (2.40)	5.10 (2.33)	4.87 (2.26)	5.15 (2.25)
<b>Discrimination</b>		GAD	PANIC	SAD	STRESS
<i>Social Distance</i>	Male	12.47 (4.43)	12.01 (4.55)	12.06 (5.40)	10.72 (3.83)
	Female	10.23 (3.22)	9.99 (4.03)	9.82 (4.16)	9.79 (3.84)

*\*Note, the pity subscale is reverse-scored, so higher scores indicate less pity for this subscale*

This chapter will discuss the results relating to stigma (stereotypes, prejudice and discrimination) expressed by adolescents toward hypothetical peers with GAD, panic disorder and SAD. It will examine differences across disorder, and gender.

### 9.1. Adolescent endorsement of stereotypes about people with anxiety disorders

Overall, the results showed that the majority of participants did not explicitly agree with negative stereotypes about anxiety disorders. However, that a considerable proportion of participants did explicitly agree with a number of stereotypes, with between 10-20% of participants endorsing items relating to the WNS, dependency, and odd/strange stereotypes in particular. While it is positive that outright agreement with stereotypes was generally low, stereotype endorsement is still relatively common in the sample. Responses to the WNS, dependency and odd/strange stereotypes indicate that between one in ten and one in five participants holds harmful stereotypical beliefs about people with anxiety disorders, namely that their symptoms are due to some perceived personal weakness, that they are dependent on others, and that they are odd, or fundamentally different to other people. In comparison, endorsement of the odd/strange vignette was low for the stress vignette, suggesting that participants view the character in the stress vignette as more like themselves. Endorsement of the dangerousness stereotype was mixed. Overall, agreement with the “frightening” and “dangerous” items on the dangerousness subscale was low, but agreement with the items relating to unpredictability was between 10-30% across vignettes, suggesting that a substantial minority of participants perceive those with anxiety disorders as being unpredictable.

These results support the early trends emerging in the adult stigma literature that points to anxiety stigma being more focused on perceptions of personal weakness (Curcio & Corboy, 2020) and from the adolescent stigma literature that suggests that adolescent stigmatising responses in general are

particularly focused on perceptions relating to negative social functioning or difference, leading to embarrassment (O'Driscoll et al., 2015).

Perceptions of those with anxiety disorders as being intrinsically weak in some way have been demonstrated in both the adult and burgeoning adolescent stigma literature (Jorm & Wright, 2008; Reavley & Jorm, 2011c; Reavley & Jorm, 2011d; Yap, Wright & Jorm, 2011; Reavley & Jorm, 2014), although the majority of existing research has only looked at stigma toward SAD and PTSD, with examination of stigma toward GAD or panic disorder essentially non-existent in the literature to date. The findings of this study present evidence of WNS endorsement for GAD, SAD and panic disorder, in adolescents, a group under-represented in this area.

Significant differences in WNS stereotype endorsement were found between clinical anxiety disorders, and between clinical disorders and the situational stress vignette. Specifically, WNS endorsement was significantly more likely for GAD and SAD than for panic disorder, and significantly lower for stress than for any of the three clinical anxiety disorders, suggesting that participants are particularly likely to view GAD and SAD as being indicative of a personal weakness that is controllable by the person ("X could snap out of it if they wanted to"). While there is a lack of previous research into WNS endorsement for GAD and panic disorder, and thus any interpretations of the reasons for the differences in stereotype endorsement across anxiety disorders is speculative, it is perhaps unsurprising that WNS endorsement was significantly higher for GAD and SAD than panic disorder, given the MHL results that consistently found that panic disorder was perceived to be more serious, concerning, and warranting help than GAD or SAD. It may be that symptoms of panic disorder are less easily dismissed as part of ordinary life, and thus people with panic disorder may be less likely to be blamed or judged as weak for their experiences. Future research should attempt to replicate these results and examine the nuances and correlates of negative perceptions of anxiety across disorder.

The endorsement of the odd/strange stereotype by a minority of the sample suggests a perception of those with anxiety disorders as somehow different to their peers. This supports the findings of a thematic analysis conducted on an open-ended question included in the pilot study of this project, aiming to explore previously unidentified anxiety-specific stereotypes, which asked participants “What words (and phrases) do you think most people would use to describe someone like (the character)?” One prominent subtheme was “Not Like Me”, in which participants’ responses marked the character with anxiety as being different to them; *“Examples of responses which fall under this subtheme include “freaky, weird”, “weirdo, loser”, “strange, odd” and “creep, loner”.* *These responses were almost exclusively given for the three clinical vignettes, with only one “loser” response being assigned to the character in the control scenario. These perceptions suggest that symptoms of anxiety may be perceived as being an indicator of social abnormality, creating a distance between the person with anxiety and those without symptoms.”* (Hanlon & Swords, 2019, p.5; see Appendix A). This study also found that the WNS stereotype was frequently mentioned by adolescents in relation to anxiety disorders (Hanlon & Swords, 2019).

No significant differences in endorsement of the odd/strange stereotype were found between the three clinical anxiety disorders, but perceived strangeness was significantly lower for the situational stress control than for GAD, panic disorder or SAD, again supporting the idea that people with anxiety disorders are being perceived as being intrinsically different to others in some way. Viewing people with mental illness as similar rather than different to oneself has been associated with decreased public stigma (e.g., Violeau et al., 2020). The odd/strangeness stereotype, then, which has not to date been examined in the context of anxiety stigma, may be a particularly useful target for reducing stigma overall, and should be examined in more detail in subsequent studies.

The perceptions of dependency (helplessness, neediness) found in this study are interesting; suggesting that some participants see those with anxiety disorders as being dependent on others.

Perceived dependency was significantly higher for GAD than either panic disorder or SAD, indicating that people with GAD may be particularly likely to be viewed as needy, helpless and dependent. This is interesting given the relatively high endorsement of the WNS for GAD; suggesting that participants are simultaneously viewing the person with GAD as weak, not sick, while also perceiving them to be dependent on others. Examining the relationship of stereotypes to each other is beyond the scope of this project, and thus it is unclear whether the same participants endorsing the WNS stereotype are also endorsing the dependency stereotype. However, it may be the case that participants are perceiving the person as being needy and dependent without their symptoms warranting it; that is, that they are simultaneously viewing the person as being personally weak and to blame for their symptoms, while being needy and helpless, rather than their endorsement of the dependency stereotype representing an acknowledgement of the severity of symptoms. It may also be the case that participants simply view people they perceive as weak as being more likely to lean on other people in their day to day lives. Future research should examine the intersection of mental illness stereotypes, as endorsement of the WNS stereotype along with perceptions of dependency could potentially increase negative feelings toward those with mental illness.

Stereotypes about those with mental illness being dangerous and potentially violent are pervasive in the general mental illness stigma literature (Angermeyer & Matschinger, 1996; Phelan & Link, 1998; Link, Yang, Phelan & Collins, 2004) but the limited studies on anxiety stigma have suggested these stereotypes are less relevant for anxiety disorders, either not endorsed, or endorsed less commonly for these conditions, in both adults (Crisp et al., 2000; Reavley & Jorm, 2011d; Wood, Birtel, Alsawy, Pyle & Morrison, 2014) and adolescents (Arbanas, 2008; Jorm & Wright, 2008; Reavley & Jorm, 2011c), although again, there is a lack of research into stigma toward people with anxiety disorders other than PTSD and social anxiety disorder. Dangerousness was also not a commonly mentioned stereotype in the aforementioned qualitative study based on the pilot study for this project (Hanlon & Swords, 2019). The results of the present study appear to support these

findings and extend them to GAD and panic disorder, although endorsement of the unpredictability items was relatively high in our sample.

Interestingly, perceived dangerousness was significantly higher for GAD than for panic disorder, SAD or stress. Perceived dangerousness was also significantly higher for panic disorder than for SAD. The “unpredictable” and “lacks self-control” items were higher than the “is dangerous” and “is frightening” items of the dangerousness subscale for GAD and panic disorder, suggesting that participants do not necessarily fear actual violence or danger from the vignette character, but rather endorse the idea that people with GAD and panic disorder are unstable in some way. This is in contrast to the stress vignette, and the SAD vignette. The previously discussed MHL results indicated that SAD was often labelled by participants as shyness or a lack of confidence, and that participants were significantly more likely to agree that personality was a cause of SAD – it may be that participants view symptoms of SAD as more stable and intrinsic to the person than symptoms of GAD and panic disorder, and are then less likely to view the person with SAD as being unpredictable. The lack of previous research into GAD and panic disorder stigma precludes comparison of these results to existing findings. As such, future research should attempt to confirm perceptions of unpredictability about people with anxiety disorders, and examine perceived dangerousness and anxiety disorders in more detail, and in direct comparison to other mental disorders, such as depression and schizophrenia.

Participants were also significantly more likely to view the GAD character as being bad company than the panic disorder character, with no difference between SAD and the other two vignettes. This is interesting, as one might expect, based on the social nature of SAD symptoms, that the bad company stereotype would be endorsed at significantly higher rates for SAD. However, again, it may relate to SAD being misperceived as a personality trait such as shyness – while shyness has consistently been associated with social rejection in children and adolescents (Richmond, Beatty & Dyba, 1985; Paulsen, Bru & Murberg, 2006) it may simply be the case that participants’ perceptions

of GAD and panic disorder are of these conditions indicating abnormality or instability (as evidenced by significant differences in perceived unpredictability between SAD and the other two clinical vignettes) which is also a frequent cause of social rejection (Hennessy, Swords & Heary, 2008; Wahl, 2002).). This may balance out the perceptions of those with clinical anxiety disorders as being Bad Company and explain the lack of difference between SAD and the other two clinical vignettes.

In summary, the majority of participants did not endorse negative stereotypes about people with clinical anxiety disorders, but a significant minority did, particularly for the WNS, dependency and odd/strange stereotypes. Negative stereotypes were generally endorsed at significantly higher rates for GAD, suggesting this may be a particularly useful target for anti-stigma intervention programmes, especially given the prevalence, burden, and delay in treatment-seeking for this condition (Hoffman et al., 2008; Benatti et al., 2016).

## **9.2. Prejudice expressed by adolescents toward hypothetical peers with anxiety disorders**

Generally, prejudice (negative emotional reactions) toward people with anxiety disorders was low. Most participants reported low levels of anger and fear, and relatively high levels of pity toward vignette characters. However, explicit agreement with the prejudice items was expressed by a proportion of the sample – between 5-13% expressed agreement across the fear subscale for GAD, for example. Low levels of pity were also reported by between 7-26% across the pity items for panic disorder and SAD. This suggests that, while those agreeing with the anger items were low, there is a level of fear, and a lack of pity expressed toward people with anxiety disorders by a minority of participants. There is an almost total lack of previous literature describing the prevalence of prejudice in the form of emotional reactions in anxiety disorders, especially in adolescents, and as such, further research is needed to confirm these results and compare prejudice toward people with anxiety disorders to prejudice toward other mental disorders. As



discussed in Chapter Three, much of the existing mental illness stigma research has utilised very limited stigma measures, often focusing solely on specific stereotypes or desired social distance. As such, knowledge about emotional reactions to mental illness in general is limited, meaning the overall picture of mental illness stigma is insufficient, given the key role of emotion as mediating the relationship between negative stereotypes and behavioural discrimination in major models of stigma (e.g., Corrigan & Watson, 2002). Angermeyer, Holzinger and Matschinger (2010), in a rare study of emotional reactions to those with mental illness found that positive reactions such as pity were frequent, but so were feelings of fear and unease, and, to a lesser extent, anger, for both depression and schizophrenia. Compared to the present study, Angermeyer et al. (2010) found much higher levels of fear toward schizophrenia than were found for anxiety disorders in this study, which is perhaps unsurprising given previous research showing high levels of perceived dangerousness for schizophrenia (Angermeyer & Matschinger, 1996; Phelan & Link, 1998; Link, Yang, Phelan & Collins, 2004). However, without research directly comparing prejudice toward people with anxiety disorders to that toward other mental illnesses, no definitive conclusions about differences between them can be drawn.

Significant differences in prejudice were found between vignette conditions. Levels of anger were significantly lower for panic disorder than either GAD or stress. This is unsurprising given the significantly lower WNS endorsement rate for panic disorder, indicating that participants view panic disorder as less controllable than the other conditions. Previous research has consistently linked perceived controllability and blame to increased negative emotional reactions (Rudolph et al., 2004; Dolphin & Hennessy, 2014; Muschetto & Siegel, 2019). This may also be related to panic disorder generally being taken more seriously than other disorders, with participants expressing significantly higher levels of concern and perceptions that panic disorder would take significantly longer to recover from. Pity was significantly higher for GAD than for either panic disorder or SAD, which is interesting – it may be that the GAD symptoms are more relatable to participants given that the worries outlined in the GAD vignette, while extreme in intensity, were related to everyday

subjects such as family and school. Research has shown compassion responses to be related to self-other similarity, i.e., how similar the member of another group is seen to be to oneself (Oveis, Horberg & Keltner, 2010). It may be the case that the more relatable the symptoms, the greater the perceived similarity between participants and those with anxiety disorders, which may lead to increased pity. Further research should examine this in greater detail. No significant differences in fear were found across disorders.

### **9.3. Level of discrimination (desired social distance) expressed by adolescents toward hypothetical peers with anxiety disorders**

Desired social distance from hypothetical peers with anxiety disorders was mixed, depending on the activity being described, and disorder, but the majority of participants were willing to engage with the vignette characters on the majority of items, across disorders. For all three clinical disorders, willingness to engage was lowest for the “have X date your best friend” item (17% for GAD, 25% for panic disorder and 29% for SAD) and highest for the “have it become general knowledge that you and X are good friends” item (55% for GAD and panic disorder, and 49% for SAD). Although the majority were willing to engage with people with anxiety disorders, a considerable proportion of the sample responded on the negative items of the scale; circling 1 and 2 of the four-point scale, where 1 indicated definite unwillingness to engage with the vignette character. Across items, between 8-50% of participants answered on the low end of the scale for GAD, 10-41% for panic disorder, and 11-34% for SAD, indicating reservations about social contact with those with anxiety disorders among a subset of the sample.

Previous research has shown lower levels of desired social distance for social anxiety disorder and PTSD compared to conditions such as psychosis (Arbanas, 2008; Jorm & Wright, 2008), but there is a distinct lack of research comparing desired social distance for GAD, panic disorder, and SAD. The present study addressed this gap, and found that participants reported significantly higher levels of desired social distance for GAD and panic disorder than for stress. No significant differences in

desired social distance were found between the three clinical vignettes. The presence of increased desired social distance for all three clinical vignettes compared to situational stress suggests that it is not simply a desire to be distant from a difficult situation, or a friend's distress, but that there is something intrinsic to adolescents' perceptions of anxiety disorders that is prompting discriminatory responses. This is perhaps unsurprising given the endorsement of stereotypes such as the WNS stereotype for anxiety disorders, and the presence of prejudice in a proportion of the sample. Endorsement of the WNS stereotype has been consistently associated with desired social distance (Reavley & Jorm, 2014; Yap, Wright & Jorm, 2011). The relationship between the WNS stereotype, prejudice and desired social distance in the present sample is outlined in subsequent chapters.

#### **9.4. Gender differences in adolescent stigmatising responses toward hypothetical peers with anxiety disorders**

As with anxiety literacy, significant gender differences in stigma toward people with anxiety disorders were found, although these varied by stigma component and disorder being measured, and in all cases, stigmatising responses were significantly higher in male participants. Males were significantly more likely than females to endorse the odd/strange, bad company and attention-seeking stereotypes for all three clinical vignettes. Males were also significantly more likely than females to endorse the dangerousness stereotype for GAD and SAD. No significant gender differences in WNS endorsement were found across vignettes. Males had significantly higher levels of prejudice than females for all three clinical vignettes, across all three subscales; higher anger and fear, and lower pity. Males also had significantly higher anger toward the character in the stress vignette than females. Finally, males had significantly higher desired social distance for all three clinical vignettes than females. No significant gender difference in desired social distance for the stress vignette was found. Measures of effect size showed that the size of gender differences found was consistent across stigma components, generally falling in the medium size range,

however the gender difference in endorsement of the odd/strange stereotype for SAD was particularly high.

These results add to those of previous studies which have found greater levels of stigma among male participants toward depression and anxiety disorders (Dolphin & Hennessy, 2016; Batterham et al., 2012; Calear et al., 2016; Grant et al., 2016). There is a severe lack of research examining why these gender differences exist. One potential explanation for the discrepancy is previous contact with a person with mental illness; anxiety disorders are more prevalent in women than men (McClellan et al., 2011) so it is conceivable that female participants are more likely to have experienced or know someone with similar symptoms. Previous contact with a person with mental illness has consistently been associated with lower levels of stigma (Angermeyer & Matschinger, 1996b; Angermeyer, Matschinger & Corrigan, 2004; Griffiths et al., 2008; Jorm & Oh, 2009; Batterham et al., 2012; Dolphin & Hennessy, 2016), so it may be that increased prevalence of anxiety disorders among women and girls leads to increased contact and familiarity with anxiety disorders in females, and a subsequent decrease in stigma. However, research has also shown lower stigma among females than males toward disorders that are more prevalent in males, such as schizophrenia (Corrigan & Watson, 2007), suggesting that level of contact may not be the only explanation. Other proposed explanations for lower levels of stigma in women and girls include higher levels of social empathy (Van Der Graaff et al., 2014) which has been associated with decreased levels of stigma toward mental illness in some studies (Webb et al., 2016) but not others (Silke, Swords & Heary, 2017). Future research should aim to explicitly investigate the reasons and underlying processes behind why men and boys are more likely to stigmatise those with mental illnesses than girls and women.

## **9.5. Summary, conclusions and implications**

Overall, the present study addresses a large research gap, examining and comparing stigma toward a variety of anxiety disorders previously neglected in the literature, in an adolescent sample, a population lacking in the anxiety stigma literature to date. The results show that in general, stigma (stereotypes, prejudice and desired social distance) was low among adolescents toward GAD, panic disorder and SAD, which is encouraging.

However, a considerable minority of the sample did express stigmatising responses. The WNS, dependency, and odd/strange stereotypes were the most frequently endorsed by participants, supporting previous research suggesting that the WNS stereotype may be particularly relevant to anxiety disorders. A proportion of the sample expressed fear and low levels of pity toward the vignette characters, and expressed a desire for social distance from those with clinical anxiety disorders. This indicates that there is a need for improved education around anxiety disorders for adolescents, particularly aimed at the WNS stereotype, given the tendency of beliefs about personal weakness to invoke blame, negative emotional reactions, and behavioural discrimination toward those with mental illness (Rudolph et al., 2004; Dolphin & Hennessy, 2014; Muschetto & Siegel, 2019). This ties in with the results discussed in Chapter Seven which showed gaps in knowledge about the aetiology of anxiety disorders among participants.

With regard to differences in stigma between anxiety disorders, the effect of disorder on stigma was largest for endorsement of the WNS stereotype, with medium effect sizes for the dangerousness and dependency stereotypes, and for levels of pity. The effect of disorder on other stereotypes, anger, and desired social distance was small, suggesting that type of anxiety disorder may be particularly important in endorsement of negative stereotypes, and for levels of pity, while less important in the context of discrimination (desired social distance). In general, participants endorsed negative stereotypes at higher rates for GAD. This, along with the results discussed in Chapter Seven showing a tendency among participants to minimise and normalise GAD as being

everyday stress, or non-clinical in nature, suggests that GAD may be a specific target that future educational interventions should focus on.

The results also showed significantly higher levels of anxiety stigma in male participants, across stereotypes, prejudice and desired social distance. Future research should aim to determine why this is the case, and anti-stigma efforts should focus on male students in particular.

from the Present Study

10.1. Introduction

This chapter will summarise the results of analyses investigating the relationships between components of MHL, stigma, and help-giving intentions. It will investigate specific research questions laid out in the previous chapter. These are outlined below:

Help-giving intentions and help-giving efficacy

- Descriptive statistics and relationship between help-giving efficacy and help-giving intentions

Relationships between individual MHL components

*Questions based on previous literature*

- Is ability to recognise anxiety disorders related to suggesting particular types of help? Does this relationship vary by anxiety disorder?
- Are causal beliefs related to type of help suggested? Does this relationship vary by anxiety disorder?
- Are causal beliefs related to beliefs about prognosis for anxiety disorders?

*Exploratory questions about relationships between MHL components*

- Does perceived impact of anxiety disorders differ according to ability to recognise anxiety disorders?
- Does level of concern toward vignette characters with anxiety disorders differ according to ability to recognise anxiety disorders?
- Do beliefs about prognosis for anxiety disorders differ depending on ability to recognise anxiety disorders?

- Do perceptions of the need for help for anxiety disorders differ depending on recognition of anxiety disorders?
- Do causal beliefs about anxiety disorders differ depending on ability to recognise anxiety disorders?
- Is level of concern for those with anxiety disorders related to the perceived impact of symptoms on ability to manage in daily life?
- Is help-giving efficacy related to type of help suggested for anxiety disorders?

#### Relationships between MHL components and stigma components

- Do participants differ on their level of stigma toward people with anxiety disorders based on their ability to recognise anxiety disorders? Does this relationship vary by anxiety disorder?
- Do specific causal beliefs relate to stereotype endorsement for anxiety disorders? (particularly the WNS and dangerousness stereotypes?)

#### Role of previous contact with a person with mental illness

- Is previous experience of mental illness related to stigma toward clinical anxiety disorders?
- Is previous experience of mental illness related to help-giving intentions (likelihood of helping) for clinical anxiety disorders?



## 10.2. Help-giving intentions and help-giving efficacy

10.2.1. What is the likelihood of participants' offering help to hypothetical peers with anxiety disorders? Do help-giving intentions differ significantly across disorder?

For each vignette, participants were asked "if you were friends with X, how likely is it that you would help with their problem?". Participants were asked to rate the likelihood of them helping on a five-point scale. Descriptive statistics are outlined in Table 10.1 below.

Table 10.1. "If you were friends with X, how likely is it that you would help with their problem?" Descriptive statistics and frequencies.

Vignette	Descriptives (Mean (SD))	Frequencies					
		Very unlikely	Somewhat unlikely	Unsure	Somewhat likely	Very likely	Missing
GAD	4.39 (0.89)	7 (2.9%)	3 (1.2%)	16 (6.6%)	79 (32.6%)	137 (56.6%)	0
Panic	4.37 (0.85)	3 (1.2%)	5 (2.1%)	23 (9.5%)	71 (29.3%)	126 (52.1%)	14 (5.8%)
SAD	4.24 (0.87)	1 (0.4%)	9 (3.7%)	26 (10.7%)	75 (31%)	98 (40.5%)	33 (13.6%)
Stress	4.09 (0.92)	6 (2.5%)	7 (2.9%)	32 (13.2%)	103 (42.6%)	86 (35.5%)	8 (3.3%)

A repeated-measures ANOVA with Greenhouse-Geisser correction showed a significant effect of vignette condition on help-giving intentions ( $F(2.80, 574.318) = 7.918, p < 0.05, \eta^2 = 0.037$ ). Pairwise comparisons with Bonferroni adjustment showed significantly stronger help-giving intentions for GAD and panic disorder than for stress ( $p < 0.05$ ). No significant difference in help-giving intentions between SAD and stress, or between any of the clinical vignettes were found.

10.2.2. Do help-giving intentions differ significantly across gender?

Independent-samples Mann-Whitney U tests showed significant gender differences in help-giving intentions for GAD ( $U = 8027, p < 0.05$ ), panic disorder ( $U = 6703, p < 0.05$ ), and SAD ( $U = 5540, p < 0.05$ ), but not for stress. In all three clinical vignettes, help-giving intentions were significantly stronger for females than for males. Table 10.2 below shows the descriptive statistics breakdown of help-giving intentions by gender.

Table 10.2. Help-giving intentions: descriptive statistics (mean (SD)) breakdown by gender

<b>Vignette</b>	<b>Descriptives (Mean (SD))</b>	
	Male	Female
<i>GAD</i>	4.05 (1.02)	4.58 (0.69)
<i>Panic</i>	4.06 (1.04)	4.51 (0.71)
<i>SAD</i>	3.97 (1.00)	4.38 (0.77)
<i>Stress</i>	4.04 (1.03)	4.13 (0.87)

10.2.3. How confident are participants in offering help to someone with an anxiety disorder? Does level of help-giving efficacy differ significantly across disorder?

Participants were asked to rate their help-giving efficacy on a five-point scale. For each vignette, participants were asked “how confident would you be in offering help with X’s problem?”.

Descriptive statistics are outlined in Table 10.3 below.

Table 10.3. “How confident would you be in offering help with X’s problem?” Descriptive statistics and frequencies.

<b>Vignette</b>	<b>Descriptives (Mean (SD))</b>	<b>Frequencies</b>					
		I would not try to help I would probably make things worse	Not very confident	Unsure	A little confident	Very confident I could help	Missing
<i>GAD</i>	3.87 (0.90)	4 (1.7%)	16 (6.6%)	42 (17.4%)	124 (51.2%)	55 (22.7%)	1 (0.4%)
<i>Panic</i>	3.69 (1.03)	7 (2.9%)	22 (9.1%)	57 (23.6%)	88 (36.4%)	52 (21.5%)	16 (6.6%)
<i>SAD</i>	3.79 (1.04)	6 (2.5%)	17 (7%)	51 (21.1%)	74 (30.6%)	59 (24.4%)	35 (14.5%)
<i>Stress</i>	3.84 (0.90)	2 (0.8%)	17 (7%)	54 (22.3%)	105 (43.4%)	57 (23.6%)	7 (2.9%)

A repeated-measures ANOVA showed no significant effect of vignette condition on help-giving efficacy.

#### 10.2.4. Does help-giving efficacy differ significantly across gender?

Independent-samples t-tests showed significant gender differences in help-giving efficacy for GAD ( $t(121.61) = -3.65, p < 0.05$ , Hedges'  $g = 0.55$ ) and panic disorder ( $t(221) = -2.65, p < 0.05$ , Hedges'  $g = 0.38$ ), with significantly higher help-giving efficacy in females than males in both cases. No significant gender differences in help-giving efficacy were found for SAD or stress. Table 10.4 below shows the descriptives statistics breakdown of help-giving efficacy by gender.

Table 10.4. Help-giving efficacy: descriptive statistics (mean (SD)) breakdown by gender

<b>Vignette</b>	<b>Descriptives (Mean (SD))</b>	
	Male	Female
<i>GAD</i>	3.55 (0.95)	4.02 (0.80)
<i>Panic</i>	3.43 (1.09)	3.82 (0.98)
<i>SAD</i>	3.57 (1.18)	3.90 (0.96)
<i>Stress</i>	3.78 (0.97)	3.87 (0.88)

#### 10.2.5. Is help-giving efficacy associated with help-giving intentions for anxiety disorders?

Linear regression was used to examine the relationship between help-giving efficacy and help-giving intentions for GAD, panic disorders and SAD. For all vignettes, help-giving efficacy significantly predicted increased likelihood of helping (see tables 10.5, 10.6 and 10.7 below).

Table 10.5. Coefficients of the model examining whether help-giving efficacy predicted help-giving intentions for GAD.

	<b>B</b>	<b>S.E.</b>	<b>Standardised Beta</b>	<b>Sig.</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Help-giving efficacy</i>	.33	.06	.33	.000	2.65	3.60
<i>Constant</i>	3.13	.24		.000		

Note:  $R^2 = 0.11, p = 0.000$

Table 10.6. Coefficients of the model examining whether help-giving efficacy predicted help-giving intentions for panic disorder.

	<b>B</b>	<b>S.E.</b>	<b>Standardised Beta</b>	<b>Sig.</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Help-giving efficacy</i>	.41	.05	.50	.000	2.51	3.23
<i>Constant</i>	2.87	.18		.000		

Note:  $R^2 = 0.25, p = 0.000$

Table 10.7. Coefficients of the model examining whether help-giving efficacy predicted help-giving intentions for SAD.

	<b>B</b>	<b>S.E.</b>	<b>Standardised Beta</b>	<b>Sig.</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Help-giving efficacy</i>	.47	.05	.56	.000	2.10	2.85
<i>Constant</i>	2.48	.19		.000		

Note:  $R^2 = 0.31$ ,  $p = 0.000$

### **SUMMARY BOX 1: Help-giving Intentions and Help-giving Efficacy**

- The majority of participants indicated that they would offer help to the vignette character, across conditions, with the proportion of participants reporting that it was either somewhat or very likely that they would offer help at 89.2% for GAD, 81.4% for panic disorder, 71.5% for SAD, and 78.1% for situational stress. Help-giving intentions were significantly stronger for GAD than for situational stress, with no other significant differences in likelihood of helping across vignettes.
- Female participants reported significantly stronger help-giving intentions than male participants for the three clinical vignettes, with no significant gender differences in help-giving intentions for the stress vignette.
- Levels of help-giving efficacy were high across vignettes, with the proportion of participants indicating that they were either a little confident or very confident in offering help ranging from 55% for SAD to 73.9% for GAD. No significant difference in help-giving efficacy was found across vignettes. Female participants had significantly higher help-giving efficacy than male participants for GAD and panic disorder, but no significant differences in help-giving efficacy were found for SAD or stress.
- Help-giving efficacy was significantly associated with stronger help-giving intentions for all three clinical vignettes.

### 10.3. Relationships between MHL components

#### 10.3.1. Is ability to recognise anxiety disorders related to suggesting particular types of help?

##### Does this relationship vary by anxiety disorder?

The recognition categories of “mentions anxiety” and “correct specific label” were collapsed into “mentions anxiety or correct specific label”. This was done both because the number of correct specific responses were zero for GAD (making chi-square analyses unviable for other research questions), and because of the ambiguity in the colloquial use of terms such as “anxiety” and “anxious” making it difficult to definitively say whether participants intend them to signify clinical anxiety or not. In this way the “mentions anxiety or correct specific label” signifies a basic level of recognition regarding anxiety disorders. This is in contrast to the “incorrect” category which refers to other, irrelevant problems, or clearly non-clinical terms such as “worried”.

Chi-square analyses were used to examine whether participants differed significantly in whether or not they suggested particular types of help, according to their ability to recognise anxiety disorders. This was done for the three condensed categories of help-giving suggestions; involve a parent/adult, informal help, and formal help, each of which was coded “yes” or “no” depending on whether participants made a help-giving suggestion which fell into this category (i.e., did participants’ recommendations of each of the three types of help-giving differ significantly according to recognition).

##### *10.3.1.2. Is ability to recognise GAD related to suggesting particular types of help?*

No significant differences between recognition groups in suggesting either involving a parent or formal help were found for GAD. Significant differences in suggesting informal help were found across recognition groups ( $\chi^2(1, 242) = 6.59, p < 0.05$ ). Participants whose labels for GAD fell into the “mentions anxiety or correct specific label” were significantly more likely to suggest some form of informal help than those who incorrectly labelled GAD, although over 90% of both groups did suggest informal help.

#### *10.3.1.3. Is ability to recognise panic disorder related to suggesting particular types of help?*

Significant differences in suggestions of informal help were again found across recognition groups for panic disorder ( $\chi^2 (1, 242) = 28.11, p < 0.05$ ). Those who either mentioned anxiety or correctly labelled panic disorder were significantly more likely to suggest informal help than those who labelled it incorrectly, with 86.9% of those in the first group giving at least one informal help suggestion, compared to just 56.7% of those in the incorrect group. As with GAD, no significant differences between recognition groups in suggesting either involving a parent or formal help were found for panic disorder.

#### *10.3.1.4. Is ability to recognise SAD related to suggesting particular types of help?*

Significant differences in suggestions of informal help were found across recognition group for SAD ( $\chi^2 (1, 242) = 10.9, p < 0.05$ ); with a significantly higher proportion of those in the “mentions anxiety or correct specific label” group suggesting informal help compared to those in the “incorrect” group (82.5% vs 62.8%). A significant difference in suggestions of formal help was also found ( $\chi^2 (1, 242) = 7.85, p < 0.05$ ), with a significantly higher proportion of those in the “mentions anxiety or correct specific label” group suggesting formal help than those in the “incorrect” group (23.7% vs 10.3%). As with both other anxiety disorders, no significant differences between recognition groups in suggesting either involving a parent or formal help were found for SAD.

### **10.3.2. Is help-giving efficacy related to type of help suggested for anxiety disorders?**

#### **(exploratory)**

Binary logistic regression was used to examine whether help-giving efficacy was associated with whether or not particular types of help were suggested for GAD, panic disorder and SAD. No significant relationship between efficacy and type of help suggested was found for GAD. No significant relationship between efficacy and suggestions of involving a parent or formal help for panic disorder or SAD. However, higher help-giving efficacy was significantly associated with

increased odds of suggesting informal help for both panic disorder and SAD (see Tables 10.8 and 10.9 below).

Table 10.8. Coefficients of the model predicting whether informal help was suggested for panic disorder.

	<b>B</b>	<b>S.E.</b>	<b>Sig.</b>	<b>Odds Ratio</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Help-giving Efficacy</i>	0.44	0.16	0.00	1.56	1.14	2.13
<i>Constant</i>	-0.21	0.57	0.71			

Note:  $R^2 = 0.034$  (Cox & Snell), 0.054 (Nagelkerke). Model  $\chi^2(1) = 7.90$ ,  $p = 0.005$

Table 10.9. Coefficients of the model predicting whether informal help was suggested for SAD.

	<b>B</b>	<b>S.E.</b>	<b>Sig.</b>	<b>Odds Ratio</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Help-giving Efficacy</i>	0.40	0.17	0.02	1.49	1.07	2.07
<i>Constant</i>	0.040	0.62	0.95			

Note:  $R^2 = 0.027$  (Cox & Snell), 0.043 (Nagelkerke). Model  $\chi^2(1) = 5.59$ ,  $p = 0.018$

### 10.3.3. Are specific causal beliefs related to type of help suggested for anxiety disorders? Does this relationship vary by anxiety disorder?

#### 10.3.3.1. Condensing causal belief items for each vignette

Prior to examining the relationship between causal beliefs and type of help suggested, it was decided that the number of causality items be reduced in order to simplify interpretation, and to avoid entering too many predictors into subsequent regression analyses.

For this reason, a principal components analysis (PCA) was conducted on the nine causality items with oblique rotation (direct oblimin) for each of the three clinical vignettes, GAD, panic disorder and SAD, in order to guide the clustering of causal belief items. The Kaiser-Meyer-Olkin measure was greater than 0.5 in all three cases, suggesting an adequate sample size for the analysis. For each clinical vignette, three factors had eigenvalues greater than 1, which together explained 56% of the variance for GAD, 55.6% of the variance for panic disorder, and 63.63% of the variance for SAD. Scree plots for all three clinical vignettes also suggested retaining three factors. As such, three factors were initially retained. The criteria used to identify those items which were good indicators

of underlying constructs were that items must have a minimum factor loading of 0.4 on one component. In Table 10.10 below, factor loadings in bold print meet the necessary criteria.

Table 10.10. Summary of principal components analysis results for the causal beliefs items for GAD, panic disorder and SAD.

	GAD			PANIC			SAD		
	Factor 1	Factor 2	Factor 3	Factor 1	Factor 2	Factor 3	Factor 1	Factor 2	Factor 3
<i>Trauma</i>	<b>0.835</b>	0.048	-0.028	<b>0.806</b>	0.215	-0.130	<b>0.768</b>	0.140	-0.159
<i>Problems from childhood</i>	<b>0.813</b>	-0.123	0.011	<b>0.841</b>	0.174	-0.018	<b>0.837</b>	0.033	0.023
<i>Personality</i>	<b>0.522</b>	0.056	0.099	<b>0.461</b>	-0.179	0.102	<b>0.408</b>	0.273	<b>-0.594</b>
<i>Runs in families</i>	<b>0.451</b>	-0.028	-0.213	<b>0.645</b>	-0.195	0.068	<b>0.773</b>	-0.208	0.179
<i>Thinks too much</i>	0.109	<b>0.856</b>	-0.011	0.186	<b>0.800</b>	0.050	0.033	<b>0.886</b>	-0.119
<i>Everyday stresses</i>	-0.086	<b>0.824</b>	-0.030	0.045	<b>0.788</b>	0.206	-0.098	<b>0.741</b>	0.389
<i>Mental illness</i>	-0.130	-0.035	<b>-0.907</b>	-0.106	0.096	<b>0.851</b>	0.142	0.233	<b>0.742</b>
<i>Chemical imbalance</i>	-0.011	0.111	<b>-0.683</b>	0.066	0.016	<b>0.808</b>	<b>0.466</b>	-0.053	<b>0.530</b>
<i>Physical medical problem</i>	0.258	-0.112	<b>-0.512</b>	0.156	-0.334	0.093	0.026	0.063	<b>0.661</b>

The PCA resulted in a broadly similar factor structure across the three clinical vignettes, although with some differences for SAD. Factor 1, comprising trauma, problems from childhood, personality and runs in families, appears to reflect causes that are rooted in the past and/or are unchangeable. The clustering of “runs in families” along with external, potentially uncontrollable (on the part of the person with the anxiety disorder) causes like trauma and problems from childhood suggests that this item may not be tapping into heredity as it was intended, but may instead be reflecting some perception adversity in the family/home environment. Similarly, the presence of personality within Factor 1 suggests that participants may view personality as being linked to the events which happen in a person’s life (trauma, problems in childhood etc.). Factor 1 was named **Carried from Past Experiences**.



Factor 2, comprising “thinks too much” and “everyday stresses” seems to reflect more transient, in-the-moment, changeable or temporary causes. Factor two was thus named **Overthinking and Daily Stressors**.

Factor 3, comprising mental illness, chemical imbalance, and physical medical problem for GAD and SAD, and mental illness and chemical imbalance alone for panic disorder, seems to reflect uncontrollable internal causes. There is difficulty interpreting participants’ understanding of the physical medical problem item; do they interpret physical medical problem to mean a physical cause for mental illness, or to mean a distinct physical illness? The discrepancy in factor structure involving physical medical problem between GAD and SAD on the one hand (for which physical medical problem loads onto factor 3) and panic disorder (for which physical medical problem does not load onto any factor) may relate to this potential conceptual confusion; for panic disorder, many participants misinterpreted symptoms to be reflective of a heart condition. For this reason, and to maximise consistency in factors across vignettes, it was decided that physical medical problem would be kept separate for all three vignettes, leaving Factor 3 as mental illness and chemical imbalance. Factor 3 was named **Internal Psychiatric Causes**.

However, the item loadings for the SAD vignette were less clearly-differentiated. The chemical imbalance item loaded above 0.4 for both Factor 1 and Factor 3. For this reason, the chemical imbalance was removed from both factors. With physical medical problem also being kept separate, this left only mental illness in Factor 3 for SAD, and thus, by necessity, Factor 3 was disregarded for SAD, keeping chemical imbalance, mental illness, and physical medical problem as separate items. Additionally, for SAD, the personality item had high loadings on both Factor 1 and Factor 3. However, the loadings were opposite in sign, positive for Factor 1, and negative for Factor 3. Nonetheless, because of the issues with Factor 3 for SAD, and therefore the lack of ability to say definitively where personality might cluster for SAD, personality was not included in Factor 1 for SAD.

Reliability analyses (Cronbach's alpha, and the Spearman-Brown coefficient for two-item clusters) were performed across the vignettes. Internal consistency for Factor 1 (trauma, problems from childhood, runs in families and personality) is as follows; GAD ( $\alpha=0.61$ ), panic ( $\alpha= 0.62$ ) and SAD (with personality removed) ( $\alpha=0.76$ ), indicating questionable to acceptable internal consistency as per George and Mallery (2003), although Field (2018) and Kline (1999) note that alpha values below 0.70 are expected when dealing with social science data. The average inter-item correlations for Factor 1 ranged from 0.24 to 0.51 across vignettes. These are broadly in line with the acceptable range for average inter-item correlations outlined by Briggs and Creek (1986), in which average inter-item correlations below 0.1 and above 0.5 should be questioned. For the two-item factors, Factor 2 (thinks too much, everyday stresses) and Factor 3 (mental illness, chemical imbalance), correlations were used as an approximate measure of reliability; the inter-item correlations for the two-item factors (Factors 2 and 3) ranged from 0.41 to 0.46 across vignettes, indicating moderate correlation.

Following this, the relevant items for each factor were summed and averaged to produce three condensed causality variables for GAD and panic disorder, along with physical medical problem, and two condensed causality variables for SAD, along with personality, chemical imbalance, mental illness and physical medical problem. Table 10.11 below summarises the condensed causal beliefs for each vignette.

Table 10.11. Condensed causal belief items for GAD, panic disorder and SAD.

<b>GAD</b>	<b>PANIC</b>	<b>SAD</b>
Carried from Past Experiences <ul style="list-style-type: none"> <li>• Trauma</li> <li>• Problems from childhood</li> <li>• Runs in families</li> <li>• Personality</li> </ul>	Carried from Past Experiences <ul style="list-style-type: none"> <li>• Trauma</li> <li>• Problems from childhood</li> <li>• Runs in families</li> <li>• Personality</li> </ul>	Carried from Past Experiences <ul style="list-style-type: none"> <li>• Trauma</li> <li>• Problems from childhood</li> <li>• Runs in families</li> </ul>
Overthinking and Daily Stressors <ul style="list-style-type: none"> <li>• Thinks too much</li> <li>• Everyday stresses</li> </ul>	Overthinking and Daily Stressors <ul style="list-style-type: none"> <li>• Thinks too much</li> <li>• Everyday stresses</li> </ul>	Overthinking and Daily Stressors <ul style="list-style-type: none"> <li>• Thinks too much</li> <li>• Everyday stresses</li> </ul>
Internal Psychiatric Causes <ul style="list-style-type: none"> <li>• Mental illness</li> <li>• Chemical imbalance</li> </ul>	Internal Psychiatric Causes <ul style="list-style-type: none"> <li>• Mental illness</li> <li>• Chemical imbalance</li> </ul>	Personality
Physical Medical Problem	Physical Medical Problem	Chemical Imbalance
		Mental Illness
		Physical Medical Problem

These condensed causal beliefs were then entered into a binary logistic regression, to examine the relationships between causal beliefs and whether or not particular types of help were suggested for each of the three clinical vignettes.

10.3.3.2. Are causal beliefs about anxiety disorders associated with type of help suggested?

Binary logistic regression was used to examine whether different types of causal beliefs are related to whether or not particular types of help (involving a parent, informal help, and formal help) were suggested by participants for each clinical vignette. In each regression, predictors (causal beliefs) were entered into the model simultaneously. The results are summarised below.

10.3.3.2.1. Causal beliefs and type of help suggested for GAD

The condensed causal belief categories included in the regressions for GAD were Carried from Past Experiences, Overthinking and Daily Stressors, Internal Psychiatric Causes, and Physical Medical Problem. No significant relationship between causal beliefs and suggestions of informal help or formal help were found for GAD. However, higher belief in Overthinking and Daily Stressors as a cause was significantly associated with decreased odds of suggesting involving a parent for GAD (see model summary in Table 10.12 below).

Table 10.12. Coefficients of the model predicting whether involving a parent was suggested for GAD.

	<b>B</b>	<b>S.E.</b>	<b>Sig.</b>	<b>Odds Ratio</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Carried from Past Experiences</i>	0.13	0.24	0.59	1.14	0.71	1.81
<i>Overthinking and Daily Stressors</i>	-0.68	0.22	0.002	0.51	0.33	0.78
<i>Internal Psychiatric Causes</i>	-0.14	0.16	0.41	0.87	0.63	1.21
<i>Physical Medical Problem</i>	-0.11	0.16	0.49	0.89	0.65	1.23
<i>Constant</i>	2.37	1.26	0.06			

Note:  $R^2 = 0.051$  (Cox & Snell), 0.072 (Nagelkerke). Model  $X^2(4) = 11.84, p = 0.019$

10.3.3.2.2. Causal beliefs and type of help suggested for panic disorder

The condensed causal belief categories included in the regressions for panic disorder were Carried from Past Experiences, Overthinking and Daily Stressors, Internal Psychiatric Causes, and Physical Medical Problem. No significant relationship between causal beliefs and suggestions of involving a

parent were found for panic disorder. However, significant relationships between causal beliefs and suggestions of both informal and formal help were found for panic disorder.

Specifically, belief in a physical medical problem as the cause of panic disorder was associated with significantly lower odds of suggesting informal help (see Table 10.13 below). Belief in Overthinking and Daily Stressors was associated with significantly lower odds of suggesting formal help, while belief in a physical medical problem as a cause was associated with significantly higher odds of suggesting formal help for panic disorder (see Table 10.14 below).

Table 10.13. Coefficients of the model predicting whether informal help was suggested for panic disorder.

	<b>B</b>	<b>S.E.</b>	<b>Sig.</b>	<b>Odds Ratio</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Carried from Past Experiences</i>	0.35	0.26	0.18	1.42	0.85	2.36
<i>Overthinking and Daily Stressors</i>	0.31	0.19	0.10	1.36	0.95	1.96
<i>Internal Psychiatric Causes</i>	-0.19	0.18	0.29	0.83	0.58	1.18
<i>Physical Medical Problem</i>	-0.32	0.15	0.03	0.73	0.55	0.97
<i>Constant</i>	1.20	0.98	0.22			

Note:  $R^2 = 0.048$  (Cox & Snell), 0.78 (Nagelkerke). Model  $X^2 (4) = 10.98$ ,  $p = 0.027$

Table 10.14. Coefficients of the model predicting whether formal help was suggested for panic disorder.

	<b>B</b>	<b>S.E.</b>	<b>Sig.</b>	<b>Odds Ratio</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Carried from Past Experiences</i>	-0.32	0.21	0.12	0.72	0.48	1.08
<i>Overthinking and Daily Stressors</i>	-0.39	0.16	0.01	0.67	0.50	0.92
<i>Internal Psychiatric Causes</i>	0.17	0.14	0.24	1.19	0.89	1.57
<i>Physical Medical Problem</i>	0.27	0.12	0.02	1.31	1.05	1.64
<i>Constant</i>	0.73	0.81	0.37			

Note:  $R^2 = 0.07$  (Cox & Snell), 0.093 (Nagelkerke). Model  $X^2 (4) = 16.01$ ,  $p = 0.003$

### 10.3.3.2.3. Causal beliefs and type of help suggested for SAD

The condensed causal belief categories included in the regressions for SAD were Carried from Past Experiences, Overthinking and Daily Stressors, Personality, Mental Illness, Chemical Imbalance, and

Physical Medical Problem. No significant relationship between any causal beliefs and suggestions of either involving a parent or formal help were found for SAD. However, belief in physical medical problem as a cause was significantly associated with decreased odds of suggesting informal help for SAD (see Table 10.15 below).

Table 10.15. Coefficients of the model predicting whether informal help was suggested for SAD.

	<b>B</b>	<b>S.E.</b>	<b>Sig.</b>	<b>Odds Ratio</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Carried from Past Experiences</i>	-0.28	0.27	0.29	0.75	0.45	1.27
<i>Overthinking and Daily Stressors</i>	0.24	0.23	0.31	1.27	0.80	2.00
<i>Personality</i>	0.04	0.17	0.80	1.04	0.75	1.46
<i>Chemical Imbalance</i>	0.04	0.20	0.86	1.04	0.70	1.55
<i>Mental Illness</i>	0.39	0.23	0.08	1.48	0.95	2.31
<i>Physical Medical Problem</i>	-0.49	0.23	0.03	0.61	0.39	0.95
<i>Constant</i>	1.20	1.01	0.24			

Note:  $R^2 = 0.047$  (Cox & Snell), 0.079 (Nagelkerke). Model  $X^2(6) = 9.47, p = 0.149$

#### 10.3.4. Are specific causal beliefs related to beliefs about prognosis for anxiety disorders?

Multiple linear regression was used to examine whether causal beliefs predicted beliefs about prognosis for anxiety disorders. As above, the condensed causal belief categories included in the regressions for GAD and panic disorder were Carried from Past Experiences, Overthinking and Daily Stressors, Internal Psychiatric Causes, and Physical Medical Problem. The condensed causal belief categories included in the regressions for SAD were Carried from Past Experiences, Overthinking and Daily Stressors, Personality, Mental Illness, Chemical Imbalance, and Physical Medical Problem. All predictors were entered into the model simultaneously.

The VIF in all regressions was less than two, suggesting no issues with multicollinearity. Histogram and p-plots suggested that the residuals were slightly skewed. Schmidt and Finan (2018) have found that in large sample sizes (where  $n > 10$  per variable in the model), results are not meaningfully impacted by violations of normality.

Causal beliefs significantly predicted perceived prognosis for all three clinical vignettes. For GAD, belief in Internal Psychiatric Causes significantly predicted more negative beliefs about prognosis (i.e., that it would take longer for the person to recover), with the same result found for panic disorder (see Tables 10.16 and 10.17 below). For SAD, belief in personality and physical medical problem as causes both significantly predicted more positive beliefs about prognosis (see Table 10.18 below).

Table 10.16. Coefficients of the model predicting whether causal beliefs predicted beliefs about prognosis for GAD.

	<b>B</b>	<b>S.E.</b>	<b>Standardised Beta</b>	<b>Sig.</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Carried from Past Experiences</i>	-.12	.08	-.10	.135	-.28	.04
<i>Overthinking and Daily Stressors</i>	.03	.07	.02	.726	-.12	.17
<i>Internal Psychiatric Causes</i>	.21	.06	.26	.000	.10	.32
<i>Physical Medical Problem</i>	-.08	.05	-.11	.131	-.19	.03
<i>Constant</i>	3.13	.410		.000		

Note:  $R^2 = 0.07$ ,  $p = 0.003$

Table 10.17. Coefficients of the model predicting whether causal beliefs predicted beliefs about prognosis for panic disorder.

	<b>B</b>	<b>S.E.</b>	<b>Standardised Beta</b>	<b>Sig.</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Carried from Past Experiences</i>	.05	.06	.05	.420	-.07	.16
<i>Overthinking and Daily Stressors</i>	-.02	.04	-.02	.713	-.10	.07
<i>Internal Psychiatric Causes</i>	.18	.04	.31	.000	.11	.26
<i>Physical Medical Problem</i>	.01	.03	.03	.687	-.05	.07
<i>Constant</i>	2.96	.22		.000		

Note:  $R^2 = 0.11$ ,  $p = 0.000$

Table 10.18. Coefficients of the model predicting whether causal beliefs predicted beliefs about prognosis for SAD.

	<b>B</b>	<b>S.E.</b>	<b>Standardised Beta</b>	<b>Sig.</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Carried from Past Experiences</i>	-.01	.06	-.02	.834	-.14	.11
<i>Overthinking and Daily Stressors</i>	.06	.06	.08	.310	-.06	.17
<i>Personality</i>	-.10	.04	-.21	.010	-.18	-.03
<i>Chemical Imbalance</i>	.07	.05	.11	.173	-.03	.16
<i>Mental Illness</i>	.06	.05	.12	.193	-.03	.16
<i>Physical Medical Problem</i>	-.12	.05	-.18	.018	-.23	-.02
<i>Constant</i>	3.53	.26		.000		

Note:  $R^2 = 0.09$ ,  $p = 0.007$



## **SUMMARY BOX 2: Exploring Relationships between MHL components based on questions**

### **from previous research**

- Recognition was significantly associated with likelihood of suggesting particular types of help, but this varied by disorder. Participants who mentioned anxiety or used the correct specific label for GAD were more likely than those in the incorrect group to suggest informal help. The same pattern was found for panic disorder and SAD. No significant differences in likelihood of suggesting formal help were found for GAD or panic disorder, but for SAD, those in the “mentions anxiety or correct specific label” group were significantly more likely to suggest formal help. No significant differences in likelihood of suggesting involving a parent or adult were found across clinical vignettes.
- Help-giving efficacy was significantly associated with increased odds of suggesting informal help for panic disorder and SAD, but not GAD. No significant effect of help-giving efficacy on odds of suggesting formal help or involving an adult were found for any of the three clinical vignettes.
- Endorsement of different types of causal beliefs about anxiety disorders was significantly associated with whether or not particular types of help were suggested. Higher belief in Overthinking and Daily Stressors as a cause was significantly associated with decreased odds of involving a parent for GAD. Belief in a physical medical problem as a cause was associated with significantly lower odds of suggesting informal help and significantly higher odds of suggesting formal help for panic disorder, while belief in Overthinking and Daily Stressors as a cause of panic disorder was associated with significantly lower odds of suggesting formal help. Belief in a physical medical problem as a cause was also associated with significantly decreased odds of suggesting informal help for SAD.

→ Causal beliefs were also significantly associated with beliefs about prognosis for all three clinical vignettes, with belief in Internal Psychiatric causes significantly associated with more negative beliefs about prognosis for GAD and panic disorder, and belief in personality and physical medical problem as causes were significantly associated with more positive beliefs about prognosis for SAD.

### 10.3.5. Does perceived impact of anxiety disorders differ according to ability to recognise anxiety disorders?

Independent-samples t-tests were conducted to examine whether perceived impact of anxiety disorders on ability to manage in daily life varied depending on ability to recognise anxiety disorders. No significant difference in perceived impact based on recognition group was found for GAD, however, significant differences were found for both panic disorder ( $t(145.19) = -3.02$ ,  $p < 0.05$ ) and SAD ( $t(212) = -3.80$ ,  $p < 0.05$ ). For both panic disorder and SAD, symptoms were seen to have a greater impact on the vignette character's ability to manage in daily life among those who mentioned anxiety or used the correct specific label, than in those who labelled symptoms incorrectly. Descriptive statistics are outlined in Table 10.19 below.

Table 10.19. Perceived impact of GAD, panic disorder and SAD on ability to manage in daily life: Descriptive statistics by recognition (mean (SD))

<i>Recognition</i>	GAD	PANIC	SAD
<i>Incorrect</i>	3.17 (0.71)	3.09 (0.85)	3.06 (0.75)
<i>Mentions anxiety or correct specific label</i>	3.32 (0.59)	3.42 (0.67)	3.43 (0.68)

### 10.3.6. Does level of concern toward vignette characters with anxiety disorders differ according to ability to recognise anxiety disorders?

Independent-samples t-tests were used to examine whether concern differed among those who recognised anxiety disorders and those who did not. Significant differences in concern based on recognition were found for all three clinical vignettes; GAD ( $t(239) = -2.71$ ,  $p < 0.05$ ), panic disorder ( $t(135.93) = -3.65$ ,  $p < 0.05$ ), and SAD significant ( $t(209) = -5.66$ ,  $p < 0.05$ ). In all cases, those in the "mentions anxiety or correct specific label" group reported significantly higher levels of concern toward vignette characters than those in the "incorrect" group. Descriptive statistics are outlined in Table 10.20 below.

Table 10.20. Level of concern for GAD, panic disorder and SAD on ability to manage in daily life: Descriptive statistics by recognition (mean (SD))

<b>Recognition</b>	<b>GAD</b>	<b>PANIC</b>	<b>SAD</b>
<i>Incorrect</i>	2.96 (0.75)	3.31 (0.76)	2.80 (0.80)
<i>Mentions anxiety or correct specific label</i>	3.20 (0.54)	3.65 (0.55)	3.36 (0.62)

### 10.3.7. Do beliefs about prognosis for anxiety disorders differ depending on ability to recognise anxiety disorders?

Independent-samples t-tests and Mann-Whitney U tests were used to examine whether beliefs about prognosis differed by level of recognition. Significant differences in beliefs about prognosis were found for all three clinical vignettes; GAD ( $t(219.87) = -3.60, p < 0.05$ ), panic disorder ( $t(121.10) = -3.10, p < 0.05$ ), and SAD ( $U = 7182, p < 0.05$ ). In all cases, those in the “mentions anxiety or correct specific label” group reported significantly more negative beliefs about prognosis than those in the “incorrect” group; that is, those who recognised anxiety disorders were more likely to report that it would take longer for the vignette character to recover. Descriptive statistics are outlined in Table 10.21 below.

Table 10.21. Perceived prognosis for GAD, panic disorder and SAD on ability to manage in daily life: Descriptive statistics by recognition (mean (SD))

<b>Recognition</b>	<b>GAD</b>	<b>PANIC</b>	<b>SAD</b>
<i>Incorrect</i>	3.22 (0.92)	3.40 (0.81)	3.28 (0.80)
<i>Mentions anxiety or correct specific label</i>	3.57 (0.55)	3.71 (0.50)	3.75 (0.51)

### 10.3.8. Do perceptions of the need for help for anxiety disorders differ depending on recognition of anxiety disorders?

As the perceived need for help item included a “don’t know” option, the “no” and “don’t know” responses were merged, so as to differentiate between those participants who definitively said that the vignette character needed help from another person, and those that did not.

Chi-square analyses were used to examine whether perceived need for help differed depending on recognition of anxiety disorders. Significant differences between the two recognition groups were

found for all three clinical vignettes; GAD ( $\chi^2 (1, 242) = 7.46, p < 0.05$ ), panic disorder ( $\chi^2 (1, 228) = 4.10, p < 0.05$ ), and SAD ( $\chi^2 (1, 210) = 8.83, p < 0.05$ ). In all cases, a significantly higher proportion of those in the “mentions anxiety or correct specific label” group reported that the vignette character needed help from another person than those in the “incorrect” group.

### **10.3.9. Do causal beliefs about anxiety disorders differ depending on ability to recognise anxiety disorders?**

Independent-samples t-tests and Mann-Whitney U tests were used to examine whether levels of endorsement of specific kinds of causal beliefs about anxiety disorders differed according to recognition group. As outlined previously, the condensed causal belief categories for GAD and panic disorder were Carried from Past Experiences, Overthinking and Daily Stressors, Internal Psychiatric Causes, and Physical Medical Problem. The condensed causal belief categories for SAD were Carried from Past Experiences, Overthinking and Daily Stressors, Personality, Mental Illness, Chemical Imbalance, and Physical Medical Problem. As such, with Bonferroni correction, p-values were set at  $p = 0.01$  for GAD and panic disorder, and  $p = 0.008$  for SAD.

#### *10.3.9.1. GAD: Recognition and causal beliefs*

Levels of endorsement differed significantly for two causal belief categories for GAD based on recognition. Levels of endorsement for Carried from Past Experiences were significantly lower among those in the “mentions anxiety or correct specific label” group than those in the “incorrect” group (sig ( $t (230) = 2.94, p < 0.01$ ), while levels of endorsement for Internal Psychiatric Causes were significantly higher in the “mentions anxiety or correct specific label” group ( $t (234) = -3.16, p < 0.01$ ). Descriptive statistics are outlined in Table 10.22 below.

Table 10.22. Condensed causal beliefs about GAD: Descriptive statistics by recognition (mean (SD))

	Mean (SD)	
	Incorrect	Mentions anxiety or correct specific label
<i>Carried from Past Experiences</i>	2.64 (0.71)	2.39 (0.60)
<i>Overthinking and Daily Stressors</i>	4.29 (0.73)	4.28 (0.65)
<i>Internal Psychiatric Causes</i>	2.83 (0.94)	3.22 (0.97)
<i>Physical Medical Problem</i>	2.30 (1.11)	2.08 (0.90)

### 10.3.9.2. Panic: Recognition and causal beliefs

Levels of endorsement differed significantly for two causal belief categories for panic disorder.

Levels of endorsement for Internal Psychiatric Causes were significantly higher in the “mentions anxiety or correct specific label” group ( $t(224) = -3.15, p < 0.01$ ), while levels of endorsement of

Physical Medical Problem were significantly higher in the “incorrect” group ( $t(227) = 5.12, p < 0.01$ ).

Descriptive statistics are outlined in Table 10.23 below.

Table 10.23. Condensed causal beliefs about panic disorder: Descriptive statistics by recognition (mean (SD))

	Mean (SD)	
	Incorrect	Mentions anxiety or correct specific label
<i>Carried from Past Experiences</i>	2.38 (0.78)	2.40 (0.67)
<i>Overthinking and Daily Stressors</i>	3.25 (1.10)	3.51 (0.83)
<i>Internal Psychiatric Causes</i>	2.93 (1.01)	3.37 (1.00)
<i>Physical Medical Problem</i>	3.49 (1.23)	2.66 (1.15)

### 10.3.9.3. SAD: Recognition and causal beliefs

Levels of endorsement differed significantly according to recognition for three causal belief categories for SAD. Levels of endorsement for personality as a cause of SAD were significantly higher among the “incorrect” group than those in the “mentions anxiety or correct specific label” group ( $t(207) = 4.40, p < 0.008$ ), while those in the “mentions anxiety or correct specific label” group had significantly higher levels of endorsement than those in the “incorrect” group for both chemical imbalance ( $t(208) = -2.90, p < 0.008$ ) and mental illness as causes ( $t(203) = -4.67, p < 0.008$ ). Descriptive statistics are outlined in Table 10.24 below.

Table 10.24. Condensed causal beliefs about SAD: Descriptive statistics by recognition (mean (SD))

	Mean (SD)	
	Incorrect	Mentions anxiety or correct specific label
<i>Carried from Past Experiences</i>	2.62 (0.90)	2.86 (0.79)
<i>Overthinking and Daily Stressors</i>	3.71 (0.89)	3.82 (0.93)
<i>Personality</i>	3.18 (1.30)	2.39 (1.28)
<i>Chemical Imbalance</i>	2.35 (1.00)	2.80 (1.26)
<i>Mental Illness</i>	2.72 (1.24)	3.50 (1.12)
<i>Physical Medical Problem</i>	2.12 (1.08)	2.07 (0.95)

### 10.3.10. Is level of concern for those with anxiety disorders related to the perceived impact of symptoms on ability to manage in daily life?

Linear regression was used to examine the relationship between perceived impact of symptoms and level of concern reported by participants for GAD, panic disorder and SAD. Perceived impact of symptoms significantly predicted level of concern for all three clinical vignettes (see Tables 10.25, 10.26 and 10.27 below).

Table 10.25. Coefficients of the model examining whether perceived impact of symptoms predicted level of concern for GAD.

	<b>B</b>	<b>S.E.</b>	<b>Standardised Beta</b>	<b>Sig.</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Perceived Impact</i>	.33	.06	.33	.000	.21	.46
<i>Constant</i>	1.99	.21		.000		

Note:  $R^2 = 0.11$ ,  $p = 0.000$

Table 10.26. Coefficients of the model examining whether perceived impact of symptoms predicted level of concern for panic disorder.

	<b>B</b>	<b>S.E.</b>	<b>Standardised Beta</b>	<b>Sig.</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Perceived Impact</i>	.36	.05	.42	.000	.26	.46
<i>Constant</i>	2.32	.17		.000		

Note:  $R^2 = 0.18$ ,  $p = 0.000$

Table 10.27. Coefficients of the model examining whether perceived impact of symptoms predicted level of concern for SAD.

	<b>B</b>	<b>S.E.</b>	<b>Standardised Beta</b>	<b>Sig.</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Perceived Impact</i>	.50	.06	.48	.000	.38	.63
<i>Constant</i>	1.44	.21		.000		

Note:  $R^2 = 0.23$ ,  $p = 0.000$



**SUMMARY BOX 3: Relationship between MHL components: Exploratory research questions**

- Perceived impact of anxiety disorders, level of concern, beliefs about prognosis, perceptions of the need for help, and causal beliefs about anxiety disorders all differed significantly based on ability to recognise anxiety disorders.
- Perceived impact of both panic disorder and SAD on ability to manage in daily life was rated as more severe among participants who could partially or correctly recognise the condition in question.
- Levels of concern were higher among those who could partially or correctly recognise the condition for GAD, panic disorder and SAD.
- Those in the “mentions anxiety or correct specific label” group had significantly more negative beliefs about prognosis for all three clinical vignettes.
- A significantly higher proportion of those in the “mentions anxiety or correct specific label” group reported that the vignette character needed help from another person, for all three clinical vignettes.

- Belief in particular kinds of causes also differed significantly based on recognition group. Those who partially or correctly recognised GAD had significantly lower levels of endorsement for Carried from Past Experiences. There were significantly higher levels of endorsement for Internal Psychiatric causes among those in the “mentions anxiety or correct specific label” group for both GAD and panic disorder. Similarly, for SAD, there were significantly higher levels of endorsement for both “chemical imbalance” and “mental illness” (i.e., the two items included in the Internal Psychiatric causes cluster for GAD and panic disorder) among those in the “mentions anxiety or correct specific label” group. Levels of endorsement of physical medical problem as a cause for panic disorder were significantly higher among those in the “incorrect” group. Finally, levels of endorsement of personality as a cause for SAD were significantly higher in the “incorrect” group.
- Perceived impact of symptoms on everyday life significantly predicted level of concern for all three clinical vignettes, with greater perceived impact associated with greater level of concern.

## 10.4. Relationships between MHL components and components of stigma

### 10.4.1. Do participants differ on their level of stigma toward people with anxiety disorders based on their ability to recognise anxiety disorders? Does this relationship vary by anxiety disorder?

Differences in stigma according to recognition were examined individually for each anxiety disorder (GAD, panic disorder and SAD). As there were 10 items (six stereotypes, three components of prejudice, and social distance) examined for each vignette, the significance level was set at 0.005 (0.05/10) to adjust for multiple comparisons (Bonferroni correction). Where data were normal (skewness and kurtosis values between +/- 2), independent-samples t-tests were used to examine whether differences in stigma occurred according to recognition. Where data were not normal, Mann-Whitney U tests were used. Descriptive statistics can be found in Table 10.28 below.

Table 10.28. Stereotypes, prejudice and desired social distance. Descriptive statistics by recognition of anxiety disorders (mean (SD)).

<b>Stereotypes</b>	<b>Recognition</b>	<b>GAD</b>	<b>PANIC</b>	<b>SAD</b>
<i>Weak not sick</i>	Incorrect	2.50 (0.82)	2.00 (0.91)	2.46 (1.06)
	Mentions anxiety or correct specific label	1.73 (0.76)	1.51 (0.68)	1.65 (0.75)
<i>Dangerousness</i>	Incorrect	2.59 (0.68)	2.11 (0.80)	1.93 (0.74)
	Mentions anxiety or correct specific label	2.30 (0.67)	1.82 (0.64)	1.59 (0.65)
<i>Dependency</i>	Incorrect	2.52 (0.76)	2.34 (0.90)	2.19 (0.93)
	Mentions anxiety or correct specific label	2.11 (0.70)	1.96 (0.80)	1.78 (0.74)
<i>Odd/strange</i>	Incorrect	2.00 (0.76)	2.06 (0.90)	2.03 (0.99)
	Mentions anxiety or correct specific label	1.77 (0.75)	1.75 (0.74)	1.73 (0.86)
<i>Bad company</i>	Incorrect	1.99 (1.00)	1.75 (0.82)	1.88 (0.98)
	Mentions anxiety or correct specific label	1.51 (0.74)	1.50 (0.71)	1.57 (0.92)
<i>Attention-seeking</i>	Incorrect	1.71 (0.78)	1.62 (0.78)	1.71 (0.87)
	Mentions anxiety or correct specific label	1.29 (0.55)	1.30 (0.54)	1.31 (0.57)

<b>Prejudice</b>		GAD	PANIC	SAD
<i>Anger</i>	Incorrect	5.11 (2.04)	4.86 (2.39)	4.71 (2.19)
	Mentions anxiety or correct specific label	4.09 (1.67)	3.94 (1.73)	3.98 (1.75)
<i>Pity*</i>	Incorrect	6.48 (2.18)	7.50 (2.44)	7.56 (2.93)
	Mentions anxiety or correct specific label	5.67 (1.42)	6.56 (2.45)	6.09 (2.55)
<i>Fear</i>	Incorrect	6.36 (2.36)	6.25 (2.69)	5.70 (2.56)
	Mentions anxiety or correct specific label	5.16 (2.10)	5.08 (2.23)	4.95 (2.64)
<b>Discrimination</b>		GAD	PANIC	SAD
<i>Social Distance</i>	Incorrect	11.72 (4.02)	12.20 (4.19)	11.81 (4.92)
	Mentions anxiety or correct specific label	10.15 (3.47)	9.75 (4.07)	9.18 (4.10)

*\*Note, the pity subscale is reverse-scored, so higher scores indicate less pity for this subscale*

#### 10.4.1.1. Do participants differ on their level of stigma toward GAD based on their ability to recognise GAD?

Significant differences were found in participants stigmatising responses based on ability to recognise GAD. Significant differences in stereotype endorsement according to recognition were found for the WNS ( $t(232) = 7.39, p < 0.005$ ), dangerousness ( $t(230) = 3.36, p < 0.005$ ), dependency ( $t(232) = 4.29, p < 0.005$ ), bad company ( $U = 5013, p < 0.005$ ), and attention-seeking stereotypes ( $U = 4722, p < 0.005$ ). In all cases, stereotype endorsement was significantly higher among those who incorrectly labelled GAD than those in the “mentions anxiety or correct specific label group”. [Note: nobody correctly labelled GAD specifically]. No significant difference in the odd/strange stereotype was found according to recognition.

Significant differences according to recognition were also found for prejudice toward GAD, for all three components; anger ( $U = 4903.5, p < 0.005$ ), pity ( $t(220.64) = 3.43, p < 0.005$ ), and fear ( $t(237) =$

4.13,  $p < 0.005$ ). Specifically, those whose responses fell into the incorrect category reported significantly higher anger and fear, and significantly less pity, than those whose responses fell into the “mentions anxiety or correct specific label” category.

Finally, a significant difference in desired social distance according to recognition was also found ( $t(230) = 3.13, p < 0.005$ ), with those in the incorrect group reporting significantly higher levels of desired social distance than those in the “mentions anxiety or correct specific label” group.

#### *10.4.1.2. Do participants differ on their level of stigma toward panic disorder based on their ability to recognise panic disorder?*

Significant differences in stereotype endorsement according to recognition was also found for panic disorder, for the WNS ( $t(131.66) = 4.14, p < 0.005$ ), dependency ( $t(210) = 3.27, p < 0.005$ ) and attention-seeking stereotypes ( $U = 4471, p < 0.005$ ). Borderline significance was also found for the dangerousness stereotype ( $t(135.9) = 2.85, p = 0.005$ ). In all cases, stereotype endorsement was significantly higher among those who incorrectly labelled panic disorder than those in the “mentions anxiety or correct specific label” group. No significant difference according to recognition were found for the odd/strange or bad company stereotypes for panic disorder.

Significant differences in prejudice toward panic disorder according to recognition were also found, with significantly higher anger ( $U = 4135, p < 0.005$ ) and fear ( $t(134.48) = 3.24, p < 0.005$ ) among those in the “incorrect” group than those in the “mentions anxiety or correct specific label” group. No significant differences in pity depending on recognition were found for panic disorder. Desired social distance toward those with panic disorder was significantly higher among those who incorrectly labelled it compared to those who mentioned anxiety or correctly labelled panic disorder ( $t(216) = 4.23, p < 0.005$ ).

*10.4.1.3. Do participants differ on their level of stigma toward SAD based on their ability to recognise SAD?*

Participants' stereotype endorsement differed significantly depending on recognition of SAD for the WNS ( $t(192.74) = 6.30, p < 0.005$ ), dangerousness ( $t(201) = 3.46, p < 0.005$ ), dependency ( $t(197.2) = 3.46, p < 0.005$ ), and attention-seeking stereotypes ( $t(187.4) = 3.84, p < 0.005$ ), with significantly higher stereotype endorsement in the incorrect group than in the "mentions anxiety or correct specific label" in all cases. No significant differences were found for the odd/strange or bad company stereotypes.

Significant differences in prejudice toward SAD depending on recognition were found for pity ( $t(193) = 3.71, p < 0.005$ ), with significantly less pity among those in the "incorrect" group than the "mentions anxiety or correct specific label" group. No significant differences according to recognition were found for anger or fear. Desired social distance was significantly higher among those incorrectly labelling SAD than those in the "mentions anxiety or correct specific label" group ( $U=3082.5, p < 0.005$ ).

#### **10.4.2. Do specific causal beliefs relate to stereotype endorsement for anxiety disorders?**

**(particularly the WNS and dangerousness stereotypes?)**

Multiple linear regression was used to examine whether causal beliefs predicted stereotype endorsement for anxiety disorders. As above, the condensed causal belief categories included in the regressions for GAD and panic disorder were Carried from Past Experiences, Overthinking and Daily Stressors, Internal Psychiatric Causes, and Physical Medical Problem. The condensed causal belief categories included in the regressions for SAD were Carried from Past Experiences, Overthinking and Daily Stressors, Personality, Mental Illness, Chemical Imbalance, and Physical Medical Problem. All predictors were entered into the regression model simultaneously.

The VIF in all regressions was less than two, suggesting no issues with multicollinearity. Histogram and p-plots suggested that the residuals were normally distributed in most models, but were skewed in a few cases (noted below). Again, as per Schmidt and Finan (2018), this was not expected to impact on results.

##### *10.4.2.1. Do causal beliefs relate to endorsement of the WNS stereotype for anxiety disorders?*

Causal beliefs were found to predict endorsement of the WNS stereotype for GAD, panic disorder and SAD. For GAD, belief in Carried from Past Experiences and Overthinking and Daily Stressors were significantly associated with increased endorsement of the WNS stereotype, while belief in Internal Psychiatric Causes was significantly associated with lower levels of endorsement of the WNS stereotype (see Table 10.29 below).

The same results were found for panic disorder, although unlike in GAD, physical medical problem was also a significant predictor, with higher levels of belief in a physical medical problem as the cause associated with significantly higher endorsement of the WNS stereotype for panic disorder (see Table 10.30 below). For SAD, belief in both personality and physical medical problem as causes was associated with significantly higher levels of endorsement of the WNS stereotype (see Table 10.31 below).

Table 10.29. Coefficients of the model predicting whether causal beliefs predicted the WNS stereotype for GAD.

	<b>B</b>	<b>S.E.</b>	<b>Standardised Beta</b>	<b>Sig.</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Carried from Past Experiences</i>	.42	.09	.33	.000	.25	.60
<i>Overthinking and Daily Stressors</i>	.22	.08	.18	.006	.06	.38
<i>Internal Psychiatric Causes</i>	-.17	.06	-.19	.004	-.29	-.06
<i>Physical Medical Problem</i>	.11	.06	.12	.076	-.01	.22
<i>Constant</i>	.44	.43		.319		

Note:  $R^2 = 0.16$ ,  $p = 0.000$

Table 10.30. Coefficients of the model predicting whether causal beliefs predicted the WNS stereotype for panic disorder.

	<b>B</b>	<b>S.E.</b>	<b>Standardised Beta</b>	<b>Sig.</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Carried from Past Experiences</i>	.35	.07	.31	.000	.20	.50
<i>Overthinking and Daily Stressors</i>	.14	.06	.17	.011	.03	.25
<i>Internal Psychiatric Causes</i>	-.11	.05	-.14	.034	-.21	-.01
<i>Physical Medical Problem</i>	.08	.04	.13	.044	.00	.17
<i>Constant</i>	.46	.29		.113		

Note:  $R^2 = 0.15$ ,  $p = 0.000$

Table 10.31. Coefficients of the model predicting whether causal beliefs predicted the WNS stereotype for SAD.

	<b>B</b>	<b>S.E.</b>	<b>Standardised Beta</b>	<b>Sig.</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Carried from Past Experiences</i>	.12	.08	.10	.126	-.03	.27
<i>Overthinking and Daily Stressors</i>	.03	.07	.03	.653	-.11	.17
<i>Personality</i>	.42	.05	.57	.000	.33	.52
<i>Chemical Imbalance</i>	.01	.06	.02	.813	-.10	.13
<i>Mental Illness</i>	-.12	.06	-.15	.043	-.24	-.004
<i>Physical Medical Problem</i>	.22	.06	.22	.001	.10	.35
<i>Constant</i>	.31	.32		.321		

Note:  $R^2 = 0.40$ ,  $p = 0.000$



10.4.2.2. Do causal beliefs relate to endorsement of the Dangerousness stereotype for anxiety disorders?

Causal beliefs were significantly associated with endorsement of the dangerousness stereotype for all three clinical vignettes. For GAD, belief in Carried from Past Experiences and Overthinking and Daily Stressors were both associated with significantly higher endorsement of the dangerousness stereotype (see Table 10.32 below). For panic disorder, Carried from Past Experiences and physical medical problem were both significant predictors of dangerousness stereotype endorsement (see Table 10.33 below). For SAD, personality, chemical imbalance, and physical medical problem were all significantly associated with increased endorsement of the dangerousness stereotype (see Table 10.34 below).

Table 10.32. Coefficients of the model predicting whether causal beliefs predicted the Dangerousness stereotype for GAD.

	<b>B</b>	<b>S.E.</b>	<b>Standardised Beta</b>	<b>Sig.</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Carried from Past Experiences</i>	.23	.07	.23	.001	.10	.37
<i>Overthinking and Daily Stressors</i>	.18	.06	.19	.004	.06	.30
<i>Internal Psychiatric Causes</i>	.04	.05	.05	.450	-.06	.14
<i>Physical Medical Problem</i>	.07	.05	.10	.116	-.03	.16
<i>Constant</i>	.84	.35		.018		

Note:  $R^2 = 0.11$ ,  $p = 0.000$

Table 10.33. Coefficients of the model predicting whether causal beliefs predicted the Dangerousness stereotype for panic disorder.

	<b>B</b>	<b>S.E.</b>	<b>Standardised Beta</b>	<b>Sig.</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Carried from Past Experiences</i>	.34	.06	.34	.000	.22	.47
<i>Overthinking and Daily Stressors</i>	.06	.05	.08	.190	-.03	.16
<i>Internal Psychiatric Causes</i>	.05	.04	.08	.233	-.03	.14
<i>Physical Medical Problem</i>	.10	.04	.19	.003	.04	.17
<i>Constant</i>	.40	.25		.114		

Note:  $R^2 = 0.20$ ,  $p = 0.000$

Table 10.34. Coefficients of the model predicting whether causal beliefs predicted the Dangerousness stereotype for SAD.

	<b>B</b>	<b>S.E.</b>	<b>Standardised Beta</b>	<b>Sig.</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Carried from Past Experiences</i>	.03	.06	.04	.619	-.09	.15
<i>Overthinking and Daily Stressors</i>	-.05	.05	-.07	.322	-.16	.05
<i>Personality</i>	.15	.04	.29	.000	.08	.22
<i>Chemical Imbalance</i>	.13	.05	.21	.006	.04	.22
<i>Mental Illness</i>	-.07	.05	-.12	.135	-.16	.02
<i>Physical Medical Problem</i>	.28	.05	.39	.000	.19	.38
<i>Constant</i>	.74	.24		.003		

Note:  $R^2 = 0.26$ ,  $p = 0.000$

#### 10.4.2.3. Do causal beliefs relate to endorsement of the Dependency stereotype for anxiety disorders?

Again, causal beliefs were significantly associated with endorsement of the dependency stereotype across anxiety disorders. For GAD, belief in Carried from Past Experiences causes significantly predicted perceived dependency (see Table 10.35 below). For panic disorder, belief in both Carried from Past Experiences and physical medical problem significantly predicted increased endorsement

of the dependency stereotype (see Table 10.36 below). Finally, for SAD, personality and physical medical problem both significantly predicted perceived dependency (see Table 10.37 below).

Table 10.35. Coefficients of the model predicting whether causal beliefs predicted the Dependency stereotype for GAD.

	<b>B</b>	<b>S.E.</b>	<b>Standardised Beta</b>	<b>Sig.</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Carried from Past Experiences</i>	.23	.08	.20	.004	.07	.38
<i>Overthinking and Daily Stressors</i>	.11	.07	.11	.111	-.03	.25
<i>Internal Psychiatric Causes</i>	.03	.06	.04	.543	-.08	.14
<i>Physical Medical Problem</i>	.08	.05	.11	.131	-.02	.18
<i>Constant</i>	1.00	.40		.013		

Note:  $R^2 = 0.08$ ,  $p = 0.002$

Table 10.36. Coefficients of the model predicting whether causal beliefs predicted the Dependency stereotype for panic disorder.

	<b>B</b>	<b>S.E.</b>	<b>Standardised Beta</b>	<b>Sig.</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Carried from Past Experiences</i>	.27	.08	.22	.001	.11	.42
<i>Overthinking and Daily Stressors</i>	.05	.06	.06	.366	-.06	.17
<i>Internal Psychiatric Causes</i>	.06	.05	.07	.292	-.05	.16
<i>Physical Medical Problem</i>	.20	.04	.29	.000	.12	.29
<i>Constant</i>	.50	.30		.099		

Note:  $R^2 = .16$ ,  $p = 0.000$

Table 10.37. Coefficients of the model predicting whether causal beliefs predicted the Dependency stereotype for SAD.

	<b>B</b>	<b>S.E.</b>	<b>Standardised Beta</b>	<b>Sig.</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Carried from Past Experiences</i>	.09	.08	.09	.235	-.06	.24
<i>Overthinking and Daily Stressors</i>	.06	.07	.07	.367	-.07	.20
<i>Personality</i>	.17	.05	.26	.001	.07	.26
<i>Chemical Imbalance</i>	.05	.06	.06	.428	-.07	.16
<i>Mental Illness</i>	-.07	.06	-.10	.212	-.19	.04
<i>Physical Medical Problem</i>	.27	.06	.31	.000	.15	0.40

<i>Constant</i>	.56	.31		.072		
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Note:  $R^2 = 0.18$ ,  $p = 0.000$

10.4.2.4. Do causal beliefs relate to endorsement of the Strange stereotype for anxiety disorders?

Causal beliefs significantly predicted endorsement of the Strange stereotype for all three anxiety disorders. Specifically, Carried from Past Experiences significantly predicted perceived strangeness for GAD (see Table 10.38 below). For panic disorder, Carried from Past Experiences, Internal Psychiatric Causes, and physical medical problem all significantly predicted increased endorsement of the strange stereotype (see Table 10.39 below). For SAD, belief in personality as a cause significantly predicted increased endorsement of the strange stereotype, while belief in Overthinking and Daily Stressors was associated with significantly reduced endorsement of the strange stereotype for SAD (see Table 10.40 below).

Table 10.38. Coefficients of the model predicting whether causal beliefs predicted the Strange stereotype for GAD.

	<b>B</b>	<b>S.E.</b>	<b>Standardised Beta</b>	<b>Sig.</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Carried from Past Experiences</i>	.27	.08	.23	.001	.11	.43
<i>Overthinking and Daily Stressors</i>	.01	.07	.00	.950	-.14	.15
<i>Internal Psychiatric Causes</i>	.02	.06	.03	.690	-.09	.13
<i>Physical Medical Problem</i>	.05	.05	.06	.387	-.06	.15
<i>Constant</i>	1.03	.41		.013		

Note:  $R^2 = 0.07$ ,  $p = 0.003$

Table 10.39. Coefficients of the model predicting whether causal beliefs predicted the Strange stereotype for panic disorder.

	<b>B</b>	<b>S.E.</b>	<b>Standardised Beta</b>	<b>Sig.</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Carried from Past Experiences</i>	.19	.08	.17	.014	.04	.35
<i>Overthinking and Daily Stressors</i>	-.00	.06	-.00	.975	-.12	.11
<i>Internal Psychiatric Causes</i>	.12	.05	.15	.033	.01	.22
<i>Physical Medical Problem</i>	.09	.04	.14	.034	.01	.18
<i>Constant</i>	.75	.31		.016		

Note:  $R^2 = 0.09$ ,  $p = 0.001$

Table 10.40. Coefficients of the model predicting whether causal beliefs predicted the Strange stereotype for SAD.

	<b>B</b>	<b>S.E.</b>	<b>Standardised Beta</b>	<b>Sig.</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Carried from Past Experiences</i>	.00	.09	.00	.981	-.17	.17
<i>Overthinking and Daily Stressors</i>	-.16	.08	-.16	.041	-.32	-.01
<i>Personality</i>	.21	.05	.30	.000	.10	.31
<i>Chemical Imbalance</i>	.06	.07	.07	.371	-.07	.19
<i>Mental Illness</i>	.06	.07	.07	.410	-.07	.19
<i>Physical Medical Problem</i>	.12	.07	.12	.106	-.03	.26
<i>Constant</i>	1.33	.36		.000		

Note:  $R^2 = 0.10$ ,  $p = 0.002$

#### 10.4.2.5. Do causal beliefs relate to endorsement of the Bad Company stereotype for anxiety disorders?

For both GAD and panic disorder, Carried from Past Experiences significantly predicted increased endorsement of the Bad Company stereotype (see Tables 10.41 and 10.42 below). For SAD, personality significantly predicted increased endorsement of the Bad Company stereotype, while Overthinking and Daily Stressors significantly predicted reduced endorsement (see Table 10.43 below). Note: The residual plots were slightly skewed for this analysis.

Table 10.41. Coefficients of the model predicting whether causal beliefs predicted the Bad Company stereotype for GAD.

	<b>B</b>	<b>S.E.</b>	<b>Standardised Beta</b>	<b>Sig.</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Carried from Past Experiences</i>	.27	.09	.20	.005	.08	.46
<i>Overthinking and Daily Stressors</i>	.10	.09	.08	.223	-.06	.27
<i>Internal Psychiatric Causes</i>	.00	.07	.00	.959	-.13	.13
<i>Physical Medical Problem</i>	.04	.06	.04	.552	-.09	.16
<i>Constant</i>	.52	.48		.274		

Note:  $R^2 = 0.05$ ,  $p = 0.023$

Table 10.42. Coefficients of the model predicting whether causal beliefs predicted the Bad Company stereotype for panic disorder.

	<b>B</b>	<b>S.E.</b>	<b>Standardised Beta</b>	<b>Sig.</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Carried from Past Experiences</i>	.22	.07	.21	.003	.07	.36
<i>Overthinking and Daily Stressors</i>	-.05	.05	-.06	.381	-.15	.06
<i>Internal Psychiatric Causes</i>	.05	.05	.07	.337	-.05	.15
<i>Physical Medical Problem</i>	.04	.04	.09	.173	-.02	.14
<i>Constant</i>	.90	.28		.002		

Note:  $R^2 = 0.07$ ,  $p = 0.006$

Table 10.43. Coefficients of the model predicting whether causal beliefs predicted the Bad Company stereotype for SAD.

	<b>B</b>	<b>S.E.</b>	<b>Standardised Beta</b>	<b>Sig.</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Carried from Past Experiences</i>	.05	.09	.05	.564	-.12	.22
<i>Overthinking and Daily Stressors</i>	-.18	.08	-.16	.029	-.34	-.02
<i>Personality</i>	.19	.06	.27	.001	.08	.30
<i>Chemical Imbalance</i>	.06	.07	.07	.424	-.08	.19
<i>Mental Illness</i>	-.07	.07	-.09	.319	-.20	.07
<i>Physical Medical Problem</i>	.13	.08	.13	.084	-.02	.28
<i>Constant</i>	1.52	.37		.000		

Note:  $R^2 = 0.11$ ,  $p = 0.001$

10.4.2.6. Do causal beliefs relate to endorsement of the Attention-Seeking stereotype for anxiety disorders?

For both GAD and panic disorder, Carried from Past Experiences significantly predicted increased endorsement of the Attention-Seeking stereotype (see Tables 10.44 and 10.45 below). For SAD, belief in both personality and physical medical problem as a cause significantly predicted increased endorsement of the Attention-Seeking stereotype (see Table 10.46 below). *Note: the residual plots were slightly skewed for this analysis.*

Table 10.44. Coefficients of the model predicting whether causal beliefs predicted the Attention-Seeking stereotype for GAD.

	<b>B</b>	<b>S.E.</b>	<b>Standardised Beta</b>	<b>Sig.</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Carried from Past Experiences</i>	.31	.07	.29	.000	.17	.45
<i>Overthinking and Daily Stressors</i>	.10	.07	.10	.111	-.02	.23
<i>Internal Psychiatric Causes</i>	.01	.05	.01	.872	-.09	.11
<i>Physical Medical Problem</i>	.01	.05	.02	.823	-.09	.11
<i>Constant</i>	.24	.37		.509		

Note:  $R^2 = 0.09$ ,  $p = 0.000$

Table 10.45. Coefficients of the model predicting whether causal beliefs predicted the Attention-Seeking stereotype for panic disorder.

	<b>B</b>	<b>S.E.</b>	<b>Standardised Beta</b>	<b>Sig.</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Carried from Past Experiences</i>	.23	.06	.25	.000	.11	.35
<i>Overthinking and Daily Stressors</i>	-.04	.05	-.06	.341	-.13	.05
<i>Internal Psychiatric Causes</i>	-.06	.04	-.10	.157	-.14	.02
<i>Physical Medical Problem</i>	.05	.03	.09	.187	-.02	.11
<i>Constant</i>	1.06	.24		.000		

Note:  $R^2 = 0.08$ ,  $p = 0.002$

Table 10.46. Coefficients of the model predicting whether causal beliefs predicted the Attention-Seeking stereotype for SAD.

	<b>B</b>	<b>S.E.</b>	<b>Standardised Beta</b>	<b>Sig.</b>	<b>C.I. Lower</b>	<b>C.I. Upper</b>
<i>Carried from Past Experiences</i>	.03	.07	.03	.700	-.11	.16
<i>Overthinking and Daily Stressors</i>	-.11	.06	-.13	.077	-.23	.01
<i>Personality</i>	.16	.04	.28	.000	.07	.24
<i>Chemical Imbalance</i>	.07	.05	.10	.198	-.04	.17
<i>Mental Illness</i>	-.06	.05	-.09	.271	-.16	.05
<i>Physical Medical Problem</i>	.23	.06	.30	.000	.12	.34
<i>Constant</i>	.94	.28		.001		

Note:  $R^2 = 0.16$ ,  $p = 0.000$



**SUMMARY BOX 4: Relationships between MHL components and stigma components: Questions based on prior research**

Significant differences in stigma (stereotypes, prejudice and discrimination) based on ability to recognise anxiety disorders were found for all three clinical vignettes.

- Stereotype endorsement and recognition: Those in the “incorrect” group had significantly higher levels of endorsement for the WNS, dependency, bad company and attention-seeking stereotypes for GAD. Those in the “incorrect” group for panic disorder also had significantly higher levels of endorsement for the WNS, dependency and attention-seeking stereotypes. Finally, those in the “incorrect” group for SAD had significantly higher levels of endorsement of the WNS, dangerousness, dependency, and attention-seeking stereotypes.
- Prejudice and recognition: Those in the “incorrect” group had significantly higher anger and fear, and significantly lower levels of pity for GAD. Those in the “incorrect” group for panic disorder also had significantly higher levels of anger and fear, but no significant differences in pity were found based on recognition. Those in the “incorrect” group for SAD reported significantly less pity. No significant differences in either anger or fear were found based on recognition for SAD.
- Discrimination (desired social distance) and recognition: Those in the “incorrect” group had significantly higher levels of desired social distance for GAD, panic disorder and SAD.

Endorsement of specific types of causal beliefs was significantly associated with endorsement of specific stereotypes, although this differed by stereotype and disorder.

- “Carried from Past Experiences”: “Carried from Past Experiences” was significantly associated with increased endorsement of all stereotypes for GAD and panic disorder; WNS, dangerousness, dependency, strange, bad company and attention-seeking. Additionally, endorsement of personality as a cause for SAD was significantly associated with increased endorsement of all stereotypes for SAD (note: personality was included in the “Carried from Past Experiences” cluster for GAD and panic disorder, but was kept separate for SAD due to multiple factor loadings).
- “Overthinking and Everyday Stressors”: was significantly associated with increased WNS endorsement for GAD and panic disorder, as well as increased endorsement of the dangerousness stereotype for GAD. Conversely, “Overthinking and Everyday Stressors” was significantly associated with reduced endorsement of the strange and bad company stereotypes for SAD.
- “Internal Psychiatric Causes”: was significantly associated with lower levels of WNS endorsement for GAD and panic disorder, and increased endorsement of the strange stereotype for panic disorder. For SAD, belief in chemical imbalance as a cause was significantly associated with increased perceived dangerousness (note: chemical imbalance was included in the “Internal Psychiatric Causes” cluster of causes for GAD and panic disorder, but was kept separate for SAD due to multiple factor loadings).
- Physical medical problem: was significantly associated with increased endorsement of the WNS, dangerousness, and dependency stereotypes for panic disorder and SAD, along with increased endorsement of the attention-seeking stereotype for SAD

## 10.5. Role of previous contact with a person with mental illness

### 10.5.1. Is previous experience of mental illness related to stigma toward clinical anxiety disorders?

Differences in stigma (stereotypes, prejudice and desired social distance) in those with previous contact with a person with mental illness (either themselves, or someone close to them) versus those with no previous contact with a person with mental illness were examined for each of the three clinical vignettes. As in section 10.2 above, the significance level was set at 0.005 (0.05/10) to adjust for multiple comparisons (Bonferroni correction). Where data were normal (skewness and kurtosis values between +/- 2), independent-samples t-tests were used to examine whether differences in stigma occurred according to previous contact with a person with mental illness.

Where data were not normal, Mann-Whitney U tests were used. Descriptive statistics are outlined in Table 10.47 below.

Table 10.47. Stereotypes, prejudice and desired social distance. Descriptive statistics by previous contact with a person with mental illness (mean (SD)).

<b>Stereotypes</b>	<b>Previous contact with a person with mental illness</b>	<b>GAD</b>	<b>PANIC</b>	<b>SAD</b>
<i>Weak not sick</i>	Yes	1.91 (0.83)	1.51 (0.68)	1.89 (0.95)
	No	2.74 (0.82)	2.08 (1.02)	2.54 (1.03)
<i>Dangerousness</i>	Yes	2.29 (0.65)	1.81 (0.67)	1.65 (0.68)
	No	2.55 (0.59)	2.11 (0.73)	2.00 (0.75)
<i>Dependency</i>	Yes	2.15 (0.71)	1.96 (0.78)	1.84 (0.83)
	No	2.61 (0.89)	2.27 (0.95)	2.23 (0.83)
<i>Odd/strange</i>	Yes	1.78 (0.72)	1.78 (0.79)	1.68 (0.80)
	No	2.20 (0.69)	2.18 (0.84)	2.41 (1.04)
<i>Bad company</i>	Yes	1.56 (0.71)	1.47 (0.66)	1.54 (0.87)
	No	2.26 (1.19)	1.80 (0.93)	2.17 (1.07)
<i>Attention-seeking</i>	Yes	1.36 (0.57)	1.30 (0.58)	1.37 (0.63)
	No	1.81 (0.87)	1.56 (0.70)	1.68 (0.87)
<b>Prejudice</b>		<b>GAD</b>	<b>PANIC</b>	<b>SAD</b>
<i>Anger</i>	Yes	4.31 (1.93)	3.86 (1.47)	4.03 (1.88)
	No	5.20 (1.70)	4.68 (2.18)	4.97 (1.97)
<i>Pity*</i>	Yes	5.88 (1.60)	6.56 (2.44)	6.50 (2.84)
	No	6.74 (1.80)	7.45 (2.50)	7.56 (2.84)
<i>Fear</i>	Yes	5.49 (2.31)	5.02 (2.29)	5.04 (2.62)

	No	6.25 (1.95)	6.05 (2.31)	5.79 (2.13)
<b>Discrimination</b>		GAD	PANIC	SAD
<b>Social Distance</b>	Yes	10.31 (3.50)	9.68 (3.66)	9.82 (4.53)
	No	11.73 (3.35)	11.73 (4.30)	11.44 (4.12)

*\*Note, the pity subscale is reverse-scored, so higher scores indicate less pity for this subscale*

#### *10.5.1.1. Do participants differ in stigmatising responses toward GAD based on previous experience of mental illness?*

A significant difference in stereotype endorsement between contact conditions (previous experience vs no previous experience of mental disorders) was found for the WNS ( $t(174) = -5.60, p < 0.005$ ), dependency ( $t(175) = -3.13, p < 0.005$ ), odd/strange ( $t(177) = -3.29, p < 0.005$ ), bad company ( $t(47.18) = -3.54, p < 0.005$ ) and attention-seeking stereotypes for GAD ( $t(49.03) = -3.14, p < 0.005$ ). In all cases, those with no previous experience of mental illness reported significantly higher levels of stereotype endorsement. No significant difference between contact conditions was found for the dangerousness stereotype for GAD.

Significant differences in prejudice were found for anger ( $U=3739.5, p < 0.005$ ) and pity ( $t(175) = -2.90, p < 0.005$ ), but not fear for GAD, with significantly higher levels of anger, and significantly lower levels of pity in the no previous experience group than in those with previous experience of mental illness. No significant difference in desired social distance was found between contact conditions for GAD, when Bonferroni correction was applied.

#### *10.5.1.2. Do participants differ in stigmatising responses toward panic disorder based on previous experience of mental illness?*

A significant difference between contact groups in endorsement of the WNS stereotype was found for panic disorder ( $t(49.322) = -3.33, p < 0.005$ ), and the difference in endorsement of the attention-seeking stereotype was just on the threshold of significance ( $U= 3434, p = 0.005$ ). In both cases, stereotype endorsement was higher among those with no previous experience of mental illness.

No other significant differences in stereotype endorsement between groups was found for panic disorder.

No significant difference in prejudice was found based on previous experience of mental illness for panic disorder, for anger, pity or fear. However, there was a significant difference in desired social distance ( $t(174) = -2.98, p < 0.005$ ), with those reporting no previous experience of mental disorders showing a significantly higher level of desired social distance from panic disorder, compared to those with previous experience of mental disorders.

#### *10.5.1.3. Do participants differ in stigmatising responses toward SAD based on previous experience of mental illness?*

Significant differences in stereotype endorsement for SAD were found between contact groups, for the WNS ( $t(176) = -3.70, p < 0.005$ ), odd/strange ( $t(51.39) = -4.08, p < 0.005$ ), and bad company stereotypes ( $U=3648, p < 0.005$ ). Again, in both cases, stereotype endorsement was significantly higher in those who reported no previous experience of mental illness.

Significant differences in prejudice were also found based on previous of experience of mental illness, for anger ( $U=3459, p < 0.005$ ), but not for pity or fear, with significantly higher levels of reported anger in the “no experience of mental illness” group. Finally, there was no significant difference in desired social distance based on previous experience of mental illness found for SAD.

**10.5.2. Is previous experience of mental illness related to help-giving intentions (likelihood of helping) for clinical anxiety disorders?**

Differences in participants' help-giving intentions (in the form of likelihood of helping) based on previous experience of mental illness were examined for each of the three clinical vignettes, using independent-samples t-tests or Mann-Whitney U tests where appropriate. Descriptive statistics can be found in Table 10.48 below.

Table 10.48. Help-giving intentions toward people with anxiety disorders. Descriptive statistics by previous experience of mental illness (mean (SD)).

<i>Previous Contact</i>	GAD	PANIC	SAD
<i>Yes</i>	4.52 (0.88)	4.48 (0.83)	4.43 (0.71)
<i>No</i>	4.00 (0.95)	4.10 (0.80)	3.76 (1.07)

Significant differences in strength of help-giving intentions based on previous experience of mental illness were found for all clinical vignettes; GAD ( $U= 1806, p<0.05$ ), panic disorder ( $U= 2017.5, p<0.05$ ), and SAD ( $t (51.09) = 3.83, p<0.05$ ). In all three vignettes, participants with no previous experience of mental illness were significantly less likely to help the vignette character than those who reported that they or someone close to them had experience of mental illness.

**SUMMARY BOX 5: Role of previous contact with a person with mental illness: Stigma and help-giving intentions**

Significant differences in stigma (stereotypes, prejudice and desired social distance) were found based on whether or not participants had previous contact with a person with mental illness.

- Stereotypes: Those with no previous contact with a person with mental illness had significantly higher levels of endorsement of the WNS, dependency, strange, bad company and attention-seeking stereotypes for GAD. WNS endorsement for panic disorder was significantly higher among those with no previous contact with a person with with mental illness. Those reporting no previous experience of mental illness also reported significantly higher levels of endorsement of the WNS, strange, and bad company stereotypes for SAD.
- Prejudice: Those with no previous experience of mental illness had significantly higher levels of anger for GAD and SAD, and significantly lower levels of pity for GAD.
- Desired social distance: No significant difference in desired social distance based on previous contact with a person with mental illness was found for either GAD or SAD. Those reporting no prior contact with mental illness had significantly higher levels of desired social distance from the vignette character with panic disorder.

Significant differences in help-giving intentions were also found based on previous contact with a person with mental illness, for all three clinical vignettes, with those participants reporting no previous experience of mental illness significantly less likely to help the vignette character in all cases.

### **Discussion**

This chapter will examine the results of analyses relating to the relationships between MHL, stigma, and help-giving intentions described in Chapter Four. First, the descriptive results relating to help-giving intentions and help-giving efficacy will be discussed, followed by the relationships between components of MHL, then the relationships between MHL and stigma. The effect of previous contact with a person with mental illness on MHL and stigma responses will also be discussed. The analyses discussed in this section both attempted to determine whether relationships previously found for other disorders are also found for clinical anxiety disorders, as well as a number of exploratory research questions. As noted in Chapter Four, the majority of previous research into relationships between these components did not examine or suggest potential explanations or underlying processes for these relationships, and as such this part of the study is largely focused on the relationships themselves rather than the processes underlying them. This chapter will be followed by the results and discussion of theory-driven mediation models exploring the processes underlying the relationship between endorsement of the WNS stereotype and help-giving intentions, mediated by emotion, and between beliefs about prognosis and help-giving intentions, mediated by emotion, as outlined in Chapter Four.

#### **11.1. Help-giving intentions and help-giving efficacy**

Over 70% of participants reported that it was likely that they would offer help to the vignette character, across all vignettes, including situational stress. The likelihood of participants offering help was significantly higher for GAD than for situational stress. This may suggest that while many participants misperceived GAD as being stress, or temporary emotional upset, they still understand that the symptoms of GAD warrant intervention; it may also be the case however, that they feel it would be easier to help the GAD character than the stress character, in which the main driver of stress is financial instability – this may be perceived by some participants as being something they



are unable to help with. Female participants reported significantly stronger help-giving intentions than male participants for the three clinical vignettes, with no significant gender differences in help-giving intentions for the stress vignette. There is a lack of existing research describing the strength of help-giving intentions for mental disorders to compare these results directly to.

Participants also had a high level of help-giving efficacy across vignettes, highest for GAD and lowest for SAD, although there were no significant differences in help-giving efficacy between disorders. Male participants had significantly lower help-giving efficacy than females for GAD and panic disorder, but not for SAD or situational stress. This is in line with findings by Kelly and Jorm (2007) that showed lower confidence in offering help among male participants for depression.

Help-giving efficacy significantly predicted help-giving intentions for all three clinical vignettes, with greater help-giving efficacy associated with stronger help-giving intentions. Overall, the results indicate that most adolescents are willing and confident in offering help for anxiety disorders.

Future research should include a more comprehensive measure of help-giving efficacy, relating to more specific acts of helping, where possible (for example, confidence in helping a peer to access professional help), to identify any potential gaps in adolescents' help-giving efficacy for specific acts of helping.

## **11.2. Relationships between individual MHL components**

### *11.2.1. Relationship between recognition and type of help suggested for anxiety disorders*

The present study found that recognition of anxiety disorders was significantly associated with the likelihood of suggesting particular types of help, but that it was not generally associated with increased odds of suggesting the most useful types of help. Those who had either correctly named the condition or mentioned anxiety were significantly more likely to suggest informal help for all three clinical vignettes, and significantly more likely to suggest formal help for SAD. Recognition was not significantly associated with suggestions of involving a parent or adult for any of the three clinical vignettes. These results suggest that while recognition may increase the likelihood of suggesting informal help versus not suggesting informal help for the three clinical vignettes, it does not generally improve the likelihood of suggesting more appropriate types of help, such as seeing a professional, or involving an adult; both were infrequently suggested. Thus, it appears that in the present study, ability to recognise the presence of anxiety did not generally indicate better quality help-giving suggestions, rather it predicted increased odds of suggesting the basic informal help that was by far the most commonly suggested form of support. Therefore, these results do not support the tentative hypothesis proposed in Chapter Four that correct recognition of anxiety disorders would be associated with higher quality help-giving suggestions. It may be the case that participants simply view these strategies to be the most effective regardless of whether they recognise the problem as being anxiety or not, and that they do not believe formal help or involving a parent is necessary even when they recognise the problem to be anxiety. This would align with the tendency of participants to endorse both everyday stresses and overthinking as being causes of anxiety disorders in this study, particularly for GAD, suggesting a general conceptualisation of these conditions as being something that can be addressed by stress-reducing activities or distraction from negative thoughts. Additionally, however, it should be noted that formal help was most likely to be suggested for panic disorder, and many participants misperceived

panic disorder to be indicative of a physical medical problem, and suggested formal help for this physical medical problem (i.e., seeing a doctor); thus, it is perhaps unsurprising that the odds of suggesting formal help were similar between those who correctly recognised the problem versus those who did not.

The exception was the SAD vignette, for which recognition was associated with increased likelihood of suggesting formal help; essentially those who viewed SAD to simply be a part of the person (shy, lacking in confidence) were less likely to suggest formal help than those who viewed SAD as being anxiety generally or social anxiety specifically. It could be that recognition of anxiety for SAD indicates something different than recognition of anxiety for GAD and panic disorder; that recognition of “anxiety” or “social anxiety” for SAD indicates recognition of the presence of a clinical anxiety disorder, whereas, for GAD, “recognition” of anxiety may actually just represent recognition of emotional distress, which may not necessarily be seen as warranting professional help. It is worth noting that no participants labelled GAD with the correct specific label, and only two participants labelled it an anxiety disorder, so the overwhelming majority of participants in the “mentions anxiety or correct specific label” group for GAD labelled it as being “anxiety” or said that the person was “anxious”. It is entirely plausible that some participants are using these terms informally in the case of GAD, to reflect a temporary emotional state, rather than indicating true recognition of the presence of a clinical anxiety disorder, which may go some way toward explaining the lack of difference in rates of formal help suggestions between the two recognition groups for GAD. It may also however, reflect a tendency for adolescents to cope alone or using informal sources such as peer support even when they are experiencing mental illness themselves (Clark et al., 2018). Finally, it may not be that those with some level of recognition of SAD were especially likely to suggest formal help, rather it may be that those in the “incorrect” group were particularly *unlikely* to suggest formal help. Those incorrectly labelling SAD tended toward personality or trait-based explanations (shyness, introversion, insecurity, self-conscious). People

who label SAD symptoms this way may be viewing SAD as simply being part of who the person is, and therefore may not judge formal help to be warranted or useful.

These results are in contrast to those found in the general MHL literature; correct recognition of depression and schizophrenia has consistently been associated with higher quality help-giving suggestions, including higher odds of suggesting professional help (Jorm et al., 2005; Mason et al., 2005; Wright et al., 2015; Amarasuriya et al., 2017). Anxiety disorders have largely been neglected in studies examining this relationship, though Mason et al. (2015) found no effect of recognition on knowledge of appropriate help for social phobia, and Wright, Jorm and Mackinnon (2012) found accurate labelling of a range of disorders including social phobia to be predictive of a preference for professional help. Yap, Reavley and Jorm (2015) found that accurate labelling was associated with more helpful first aid responses for social phobia, including increased suggestions of professional help, in a sample of 12-25-year-olds. Participants were also significantly more likely to rate professional help and making a doctor's appointment for the person as being helpful when they could label social phobia accurately (Yap, Reavley & Jorm, 2015). In contrast to studies consistently finding that recognition predicted better quality help-giving, Byrne et al. (2015) found that recognition of depression did not predict type of help suggested in a sample of adolescents.

#### *11.2.2. Relationship between recognition and perceived impact, level of concern, beliefs about prognosis, perceived need for help and causal beliefs about anxiety disorders (exploratory)*

While studies have begun to investigate the relationship between recognition of mental disorders and knowledge of appropriate help/type of help suggested, the relationship between recognition of disorders and other components of MHL has been neglected; thus, little is known about the relationship between the most basic component of MHL, ability to recognise disorders, and other components of MHL. The present study investigated whether recognition predicted other components of MHL, in order to examine whether ability to partially or correctly label anxiety disorders was indicative of better MHL overall. All of the MHL components examined – namely,

perceived impact of anxiety disorders, level of concern, beliefs about prognosis, perceptions of the need for help, and causal beliefs about anxiety disorders – differed significantly based on ability to recognise anxiety disorders.

Those who could partially or correctly recognise the disorder (i.e., those in the “mentions anxiety or correct specific label” group) perceived a more severe impact of both panic disorder and SAD on ability to manage in day-to-day life. They also had significantly higher levels of concern, believed it would take significantly longer to recover, and were significantly more likely to say that the character needed help, for all three clinical vignettes.

Endorsement of specific causal beliefs also differed significantly across recognition groups, with significantly higher levels of endorsement for Internal Psychiatric Causes (mental illness and chemical imbalance) for GAD and panic disorder, and higher endorsement of the mental illness and chemical imbalance items separately for SAD among those who partially or correctly recognised the disorder. There were significantly lower levels of endorsement of Carried from Past Experiences for GAD among those in the “mentions anxiety or correct specific label” group. There were significantly higher levels of endorsement of physical medical problem among those who incorrectly labelled panic disorder, and significantly higher levels of personality as a cause for SAD among those in the incorrect group.

These results suggest that recognition of anxiety is associated with knowing that symptoms are indicative of a problem distinct from normal worry; which impacts functioning, warrants concern and help, will take longer to recover from, and that symptoms are caused by something other than routine stress. Essentially, overall, recognition is associated with better knowledge and understanding of anxiety disorders.

### *11.2.3. Relationship between causal beliefs and type of help suggested for anxiety disorders*

Specific causal beliefs were significantly associated with likelihood of suggesting particular kinds of help for anxiety disorders; supporting the hypothesis proposed in Chapter Four. Endorsement of

Overthinking and Daily Stressors as a cause significantly predicted decreased likelihood of suggesting involving a parent for GAD, and decreased likelihood of suggesting formal help for panic disorder. Belief in a physical medical problem as a cause was associated with significantly lower odds of suggesting informal help for panic disorder and SAD, and significantly higher odds of suggesting formal help for panic disorder. These results make intuitive sense – if participants viewed Overthinking and Daily Stressors as a cause they were less likely to recognise the need for adult involvement; this again suggests that stronger belief in this kind of cause implies a minimisation of the severity of symptoms of GAD by participants. Indeed, previous research has shown a negative association between endorsement of stressful events as a cause of depression and endorsement of medication as a treatment (Samouilhan & Seabi, 2010). While stressful events may indeed aggravate symptoms of GAD (Tyrer & Baldwin, 2006) and panic disorder (Moitra et al., 2011) it seems participants who perceive stress as a cause see the perceived or hypothesised stressful events as the main issue, rather than recognising that the vignette character is experiencing an anxiety disorder that will not simply disappear when sources of stress are removed (Tyrer & Baldwin, 2006; APA, 2013). The negative relationship between belief in a physical problem as a cause and suggestions of informal help is also expected; if a participant believes a physical medical problem is the cause, it wouldn't make sense for them to suggest distraction or talking to help. The relationship between belief in a physical cause and increased likelihood of suggesting formal help for panic disorder also makes sense; a large proportion of the formal help suggestions for panic disorder involved medical help.

Previous research in depression examining the relationship between causal beliefs and knowledge of appropriate help has found similar results suggesting that beliefs about appropriate help and beliefs about causality are broadly congruent with each other. Samouilhan and Seabi (2010) found that belief in an inherited cause or social factors as a cause of depression was strongly associated with endorsement of self-help strategies or dealing with depression alone. They also found that belief in a chemical imbalance as the cause of depression was strongly associated with

endorsement of medication as treatment. No relationship between belief in chemical imbalance and mental illness as causes of anxiety disorders and suggestions of formal help were found; this may be due to the extremely small proportion of participants either endorsing those causes for anxiety disorders or suggesting formal help for anxiety disorders. Further research into beliefs about aetiology and their relationship to knowledge and beliefs about appropriate treatment for anxiety disorders is needed, given the under-treatment of anxiety disorders in practice, and long delays in treatment-seeking (Johnson & Coles, 2013; Bellati et al., 2016), it may well be that beliefs about the cause of symptoms could represent a valuable target for education and improving uptake of professional treatment.

#### *11.2.4. Relationship between causal beliefs and beliefs about prognosis for anxiety disorders*

The present study also found that causal beliefs were significantly associated with beliefs about prognosis. Belief in Internal Psychiatric Causes (chemical imbalance and mental illness) was significantly associated with believing that it would take longer for the person to recover, for both GAD and panic disorder, tentatively supporting the hypothesis proposed in Chapter Four which predicted that biologically-based causal beliefs would be associated with poorer estimations of prognosis for those with anxiety disorders. Additionally, belief in personality and physical medical problem were associated with significantly more positive beliefs about prognosis for SAD.

These results are interesting in the context of previous research proposing that causal beliefs could influence beliefs about prognosis through psychological essentialism, discussed in Chapter Four. Essentialism refers to thinking about a particular group of people that implies difference between group members and other people, that this difference is naturally occurring, and is enduring and not easily changed (Haslam & Ernst, 2002). Previous research has linked biologically-based explanations, such as chemical imbalance, for mental disorders to increased prognostic pessimism (Haslam & Ernst, 2002; Dar-Nimrod & Heine, 2011; Haslam & Kvaale, 2015), with the authors suggesting that these causal explanations are particularly conducive to essentialist thinking, being

perceived as immutable, natural, and discrete, this in turn influences whether a mental disorder is perceived as being lasting or temporary. The results of the present study relating to the “Internal Psychiatric Causes” belief and increased prognostic pessimism for GAD and panic disorder seem to support this hypothesis. It was suggested in Chapter Seven that the low endorsement of mental illness as a cause for anxiety disorders may be due to anxiety disorders being seen more as an extension of normal experience by many participants, and that adolescents’ conceptualisation of “mental illness” may centre on conditions such as schizophrenia which are more obviously out of the ordinary. The clustering together of the “mental illness” and “chemical imbalance” items together in the present study under the “Internal Psychiatric Causes” factor supports the idea that participants’ understanding of “mental illness” is one of a discrete condition, caused by natural processes. In turn, the relationship between endorsement of Internal Psychiatric Causes and greater prognostic pessimism supports previous research linking biologically-based explanations for mental disorders to essentialist beliefs (Haslam & Ernst, 2002; Dar-Nimrod & Heine, 2011; Haslam & Kvaale, 2015).

Interestingly, endorsement of personality as a cause was associated with prognostic optimism for SAD, suggesting that participants either do not view personality as being immutable and enduring, or that by viewing symptoms of SAD as simply being a result of who the vignette character is, that symptoms are minimised and perceived to be less serious and more likely to resolve. More research is needed.

#### *11.2.5. Relationship between perceived impact and level of concern for hypothetical peers with anxiety disorders*

The present study also found that perceived impact of symptoms on ability to manage in everyday life significantly predicted higher level of concern for all three clinical vignettes. This was an exploratory research question, but supports the idea that different components of mental health



knowledge (understanding that symptoms can impact functioning) are linked to others (ability to recognise symptoms as cause for concern).

#### *11.2.6. Is help-giving efficacy associated with whether or not particular types of help are suggested for anxiety disorders?*

The present study also found that level of confidence in offering help was associated with increased odds of suggesting informal help for panic disorder and SAD, but no effect of help-giving efficacy on the likelihood of suggesting formal help or involving an adult. This is unsurprising, as the informal help-giving suggestions involve more active participation from the helper; discussing the problem, providing emotional support etc.; higher levels of confidence in help-giving would be expected to increase the likelihood of the respondent suggesting directly helping the vignette character. Spiker and Hammer (2019) found that self-efficacy relating to mental health first aid actions significantly predicted increased intentions to perform mental health first aid actions.

### **11.3. Relationships between MHL components and stigma components**

This section will discuss the results of analyses relating recognition to all three components of stigma, as well as examining the relationship between causal beliefs and stereotype endorsement. These research questions are based on previous research outlined in Chapter Four.

#### *11.3.1. Does stigma (stereotypes, prejudice and discrimination) differ based on ability to recognise anxiety disorders?*

The present study found that stigma differed significantly among participants based on ability to recognise disorders, across all three stigma components. First, those who incorrectly labelled disorders had significantly higher levels of endorsement for the WNS, dependency and attention-seeking stereotypes for all three clinical vignettes, as well as significantly higher levels of

endorsement of the bad company stereotype for GAD, and dangerousness stereotype for SAD.

Thus, in the present sample of adolescents, having partial or correct recognition of anxiety disorders was associated with significantly lower levels of stereotype endorsement.

Those who incorrectly labelled disorders also reported significantly higher levels of prejudice toward people with anxiety disorders; significantly higher levels of anger and fear, and significantly less pity for GAD, significantly higher levels of anger and fear for panic disorder, and significantly less pity for SAD.

Finally, participants who incorrectly labelled disorders had significantly higher levels of desired social distance (discrimination) for all three clinical vignettes. The results of the present study therefore show that ability to at least recognise the presence of anxiety, if not correctly label the condition, was associated with significantly less stigma, on all three stigma components, for all three clinical vignettes, tentatively supporting the hypothesis proposed in Chapter Four that recognition would be associated with lower stigma. This mirrors results from previous studies which have shown recognition to be associated with reduced WNS endorsement for depression, SAD, PTSD and psychosis (Wright, Jorm & Mackinnon, 2011; Yap et al., 2013), and reduced dangerousness for SAD, a finding echoed in the present study. Previous studies have also shown recognition to be associated with significantly reduced anger toward depression (Dolphin & Hennessy, 2016), and significantly lower stigma on all three components for SAD (Lynch et al., 2020).

However, conflicting results have also been found. Lynch et al. (2020) did not find the same relationship between recognition and stigma for depression that they did for SAD. Wang and Lai (2008) found no differences in stigma based on recognition of depression, for WNS or dangerousness endorsement, or for desired social distance, and a review by Jorm and Oh (2009) also found mixed results, although their review included studies which were looking at participants

response to psychiatric labels as well as their own ability to label disorders, which are not necessarily the same thing.

Because of the methodological inconsistencies in measuring stigma across previous studies, and the total lack of existing studies examining the relationship between recognition and stigma for GAD and panic disorder, definitive conclusions cannot be drawn as to whether and how this relationship may differ between anxiety disorders and other mental illnesses. Future research should directly compare the relationship between recognition of mental disorders and stigma across a wide range of mental illnesses.

### *11.3.2. Relationship between causal beliefs and endorsement of negative stereotypes about hypothetical peers with anxiety disorders*

The role of causal beliefs in predicting endorsement of negative stereotypes was examined in the present study; significant associations between causality and stereotypes were found, although this differed by stereotype and disorder.

The results generally indicate that belief in psychosocial causes, such as those included in “Carried from Past Experiences” and “Overthinking and Daily Stressors” significantly increase endorsement of the WNS stereotype, while endorsement of biologically based causes, such as “Internal Psychiatric Causes” significantly decrease endorsement of the WNS stereotype for GAD and panic disorder, with similar results for SAD (which had slightly different groupings of causes, but for which personality was associated with significantly higher levels of WNS endorsement).

Endorsement of physical medical causes was also associated with significantly lower WNS endorsement for panic disorder and SAD. These results tentatively support the hypothesis proposed in Chapter Four which predicted that biologically-based causal beliefs would be associated with lower WNS endorsement. This suggests that belief in biological or physical causes reduces the likelihood of perceiving anxiety disorders as being the person’s own fault, while belief in psychosocial causes increases it. This is interesting, as the psychosocial causes clustered in the

“Carried from Past Experiences” factor included trauma, problems from childhood, and personality; causes one would generally perceive to be out of the person’s control; however, it may be that participants nonetheless believe that the hypothetical peer with an anxiety disorder should be able to overcome their symptoms when caused by psychosocial factors, as opposed to biological ones. Future research should examine this in more detail. It is less surprising that “Overthinking and Daily Stressors” was associated with significantly increased WNS endorsement; it may be the case that participants view these causes as common, and blame the characters with anxiety disorders for a perceived inability to cope with ordinary life events in the same way as others.

These findings are generally in line with previous research into the relationship between causal beliefs and WNS endorsement, although there are conflicting results across studies. Endorsement of biogenetic causes were associated with reduced endorsement of the WNS stereotype for depression, schizophrenia, PTSD and SAD in a study by Reavley and Jorm (2014), as they were for anxiety disorders in the present study. Psychosocial causal beliefs were associated with significantly increased WNS endorsement for schizophrenia (Reavley & Jorm, 2014), but significantly decreased WNS endorsement for depression (Reavley & Jorm, 2014; Yoshioka et al., 2016). It may be the case that psychosocial causal beliefs are differentially related to perceptions of blame and personal weakness depending on which mental illness is being studied, but much more research is needed in this area before any firm inferences can be made.

Attribution theory posits that when a cause is seen as controllable, then the person is blamed for their condition (Rudolph et al., 2004); perceived controllability of depression predicted inferences of responsibility and increased prejudice in adolescents in a study by Dolphin and Hennessy (2014), and perceptions of uncontrollability relating to causes of mental illness were associated with less blame in a review by Kaushik et al. (2016). This fits with the findings from the present study; biological causes – likely to be perceived as uncontrollable – were associated with significantly lower endorsement of the WNS stereotype (which implies personal responsibility, blame; “could

snap out of it if they wanted” “not a real medical illness” etc.). Following the tenets of attribution theory, the significant association between psychosocial causes and endorsement of the WNS stereotype, which may be seen as a rough proxy measure of perceived personal responsibility, appears to suggest that participants view psychosocial causes – or at least participants’ response to them in the form of symptoms of anxiety disorders – as being controllable. Future research should explicitly measure perceived controllability of causal attributions for anxiety disorders.

Causal beliefs were also significantly associated with perceived dangerousness. Endorsement of “Carried from Past Experiences” was significantly associated with increased endorsement of the dangerousness stereotype for both GAD and panic disorder. “Overthinking and Daily Stressors” was significantly associated with increased perceived dangerousness for GAD. For panic disorder and SAD, belief in a physical medical problem as a cause predicted significantly higher perceived dangerousness. Finally, belief in personality and chemical imbalance as causes were both significantly associated with increased endorsement of the dangerousness stereotype for SAD.

Previous studies have shown that belief in personality-based causes were associated with increased perceived dangerousness and unpredictability for depression and schizophrenia, and that inherited or genetic causes were associated with significantly increased perceived dangerousness for depression (Yoshioka et al., 2016). Reavley and Jorm (2014) also found that personality was associated with greater perceived dangerousness for depression, schizophrenia, SAD and PTSD.

The relationship between “Carried from Past Experiences”, which included personality, and perceived dangerousness of anxiety disorders in the present study then is supported by previous research. However, it is unclear *why* this may be the case; it could be that personality and past experience-based causes imply to participants that the causes have left the person with an anxiety disorder with some sort of shortcoming which is leading to increased perceptions of instability or unpredictability of some kind (as endorsement of the “pure” dangerousness items was quite low

across anxiety disorders). Future research should attempt to investigate the underlying processes behind this link.

Haslam and Kvaale (2015) suggest that psychological essentialism may partially account for the relationship between causal beliefs – namely biogenetic causal beliefs – and perceived dangerousness, by noting that biological causal beliefs trigger essentialist thinking, and that essentialist thinking is associated with increased endorsement of negative stereotypes overall, which is supported by the finding that endorsement of chemical imbalance as a cause was linked to significantly higher levels of perceived dangerousness in the present study. However, the relationship between psychosocial causal beliefs such as “Carried from Past Experiences” and “Overthinking and Daily Stressors” and increased perceived dangerousness in the present study is less easily explained, as these kinds of causal beliefs are not typically seen as essence-like compared to biological causes (Haslam & Ernst, 2002). Clearly, more research is needed.

Physical medical problem being associated with increased perceived dangerousness for panic disorder and SAD is surprising – previous research found no relationship between belief in an underlying physical illness and endorsement of the dangerousness stereotype across mental disorders (Reavley & Jorm, 2014). It may be the case that participants were indicating that they felt the vignette character was in danger when they perceived the cause to be a medical problem, rather than that the character was dangerous, or it could be the case that some participants endorsed physical medical problem to mean an underlying biological cause of mental illness, rather than a medical problem such as a heart condition, this might have triggered essentialist thinking and thus negative stereotypes (Haslam & Ernst, 2002; Haslam & Kvaale, 2015). Future research should attempt to determine whether this relationship is replicable, and examine the nuances of it further.

All previous studies reviewed which examined the relationship between causal beliefs and stereotype endorsement focused solely on the WNS and dangerousness stereotypes, as discussed

above. As such, analyses conducted in the present study on the relationship between causal beliefs and other stereotypes are largely exploratory in nature and are discussed briefly below.

Belief in "Carried from Past Experiences" for GAD and panic disorder, and belief in personality (which was included in "Carried from Past Experiences" for the other two clinical vignettes) for SAD, was significantly associated with increased endorsement of the dependency, strange, bad company and attention-seeking stereotypes. Belief in these kinds of causes for anxiety disorders were thus significantly associated with all of the negative stereotypes measured in this study.

Endorsement of "Overthinking and Everyday Stressors" as a cause was significantly associated with reduced endorsement of the strange and bad company stereotypes for SAD; it may be the case that if participants view the root of the SAD symptoms as being ordinary stress or simply thinking too much, then the SAD character is seen to be more "normal" and less odd.

"Internal Psychiatric Causes" endorsement significantly predicted increased endorsement of the strange stereotype for panic disorder. It may be the case that because these kinds of causes are more likely to be seen as essence-like, that they increase the perception of the person as being fundamentally different to other people (Haslam & Kvaale, 2015), which could potentially result in increased perceived strangeness.

Finally, belief in a physical medical problem as a cause was significantly associated with increased endorsement of the dependency stereotypes for panic disorder and SAD, along with increased endorsement of the attention-seeking stereotype for SAD. The relationship between physical medical problem and perceived dependency makes sense in the context that physical illness is likely to require assistance from other people. The relationship between physical medical problem and increased perceived attention-seeking for SAD is less intuitive – future research should aim to replicate this finding and examine why this may be the case.

## **11.4. Role of previous contact with a person with mental illness**

### *11.4.1. Does level of stigma toward people with anxiety disorders differ based on previous contact with a person with mental illness?*

Responses to all three stigma measures (stereotypes, prejudice and desired social distance) differed significantly based on whether or not adolescents reported previous contact with a person with mental illness. Participants reporting no prior contact with mental illness had significantly higher levels of stereotype endorsement across multiple stereotypes, across the three clinical vignettes, significantly higher levels of prejudice for GAD and SAD, and higher levels of desired social distance for panic disorder, indicating that previous contact with a person with mental illness is associated with decreased stigma toward people with anxiety disorders. These results support the hypothesis proposed in Chapter Four which predicted that previous contact with a person with mental illness would be associated with lower stigma.

Previous research has found similar results, with previous contact with a person with mental illness associated with reduced stereotype endorsement, less prejudice, and lower desire for social distance across a range of mental disorders (Angermeyer & Matschinger, 1996b; Griffiths, Christensen & Jorm, 2008; Batterham, Griffiths, Barney & Parsons, 2012; Yap et al., 2013; Dolphin & Hennesy, 2016), although Kaushik et al. (2016) found mixed results on the role of familiarity with mental illness and stigma in children and adolescents.

### *11.4.1. Do help-giving intentions toward people with anxiety disorders differ based on previous contact with a person with mental illness?*

The role of previous contact in likelihood of helping a hypothetical peer with an anxiety disorder was also examined on an exploratory basis. Participants who reported no previous contact with a person with mental illness had significantly lower help-giving intentions for GAD, panic disorder and SAD. Familiarity with mental illness may increase likelihood of helping by decreasing stigma. In the present study, lack of previous contact with a person with mental illness was associated with



increased stigma. Stigma has previously been associated with poorer help-giving responses (Rossetto, Jorm & Reavley, 2014).

### **11.5. Summary and conclusions**

The present study has demonstrated a relationship between MHL components among adolescents, with recognition of anxiety associated with greater perceived impact, greater levels of concern, and greater endorsement of mental illness and chemical imbalance – “Internal Psychiatric Causes” - as causes, indicating greater understanding that the problem is a distinct clinical disorder rather than an extension of everyday experience. Causal beliefs in turn predicted the likelihood of suggesting particular types of help, with belief that “Overthinking and Daily Stressors” was a cause associated with significantly lower chances of recommending involving a parent or formal help, indicating that low literacy on one component of MHL translates to low literacy on another. Similarly, belief in “Internal Psychiatric Causes” was associated with increased belief that it would take longer to recover from anxiety disorders. Perceived impact of anxiety disorders significantly predicted level of concern; indicating that understanding the impact of anxiety disorders on functioning is associated with understanding that anxiety disorders are a problem that warrant concern.

All of these relationships together underline the idea that MHL is more than simply being able to name a disorder, that understanding goes beyond recognition, involving multiple levels and aspects of knowledge, which are inter-related to an extent, but not perfectly so. Indeed, recognition of anxiety was not associated with better help-giving suggestions; indicating that MHL is more complex than simply showing people how to recognise disorders.

The present study also demonstrated a relationship between components of MHL and stigma, with recognition of anxiety – either being able to correctly name the disorder or mentioning anxiety – associated with significantly lower stigma on all three components of stigma, across anxiety disorders. Beliefs about the causes of anxiety disorders were also significantly associated with

stigma, with “Carried from Past Experiences” and “Overthinking and Daily Stressors” particularly associated with increased stereotype endorsement, while “Internal Psychiatric Causes” were associated with significantly lower endorsement of one of the most damaging stereotypes, the WNS stereotype. These results overall suggest that greater understanding of anxiety disorders is associated with less stigma – and that recognition that clinical anxiety disorders are distinct from ordinary stress and worry is likely to reduce stigmatising responses, particularly with regard to perceptions of personal weakness. The relationship between components of stigma will be explored in the next chapter.

**Results from Theory-Driven Mediation Models**

Theory-driven mediation models (see Chapter Four, section 4.4.2.) were conducted using Hayes' (2017) PROCESS macro (version 3.2) for SPSS statistics version 25. For each clinical anxiety disorder vignette, two models were produced:

- Effect of WNS stereotype endorsement on help-giving intentions, and whether this is mediated by prejudice (anger, pity and fear) and discrimination (desired social distance)
- Effect of beliefs about prognosis on help-giving intentions, and whether this is mediated by prejudice (anger, pity and fear) and discrimination (desired social distance).

The prejudice variables (anger, pity and fear) were inputted as parallel mediators, preceding the sequential mediator, desired social distance. The results of these analyses are described below.

Additional tables containing the bivariate correlations between the key variables included in the process models for each vignette are included in Appendix I.

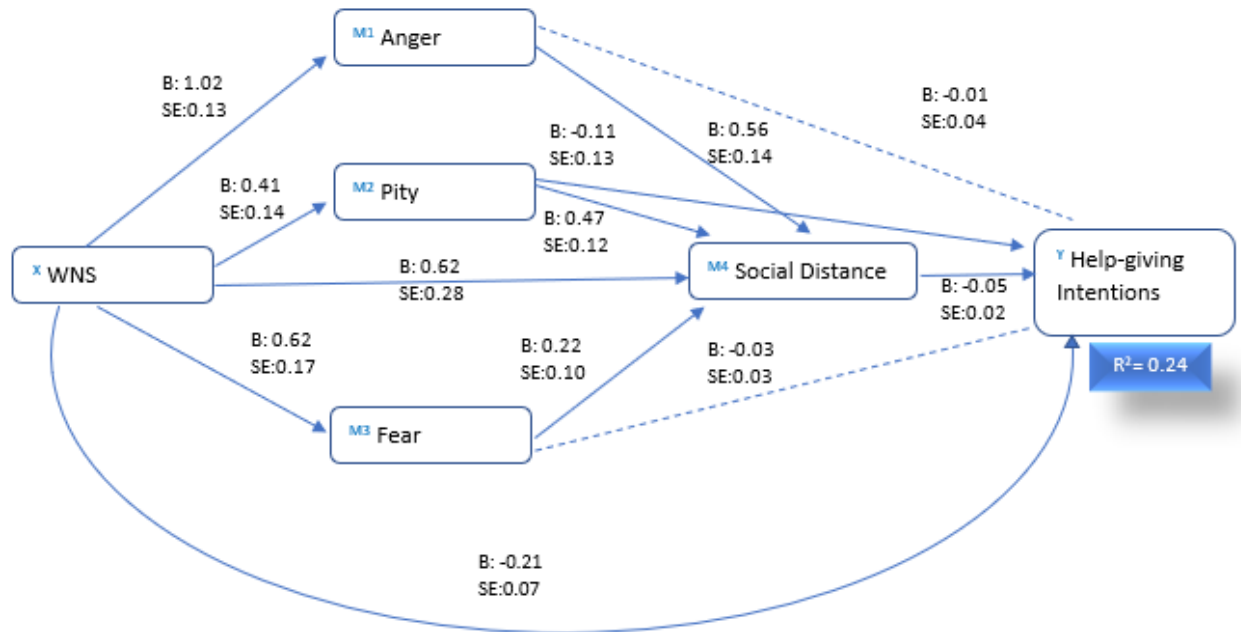
**Note:** the pity subscale is reverse scored, so negative coefficients when pity is an outcome indicate increased pity

**12.1. Does endorsement of the WNS stereotype for anxiety disorders predict prejudice, discrimination and help-giving intentions?**

*12.1.1. Does endorsement of the WNS stereotype for GAD predict prejudice, discrimination and help-giving intentions?*

Overall, the model accounted for 24% of the variance in help-giving intentions for GAD ( $R^2=0.24$ ,  $F(5, 215) = 13.23$ ,  $p<0.000$ ). Endorsement of the WNS stereotype was significantly associated with higher levels of anger and fear, and lower levels of pity (i.e., higher prejudice) (see Figure 12.1 below). Higher levels of anger and fear, and lower levels of pity all significantly predicted greater desire for social distance, as did endorsement of the WNS stereotype (see Figure 12.1).

Endorsement of the WNS stereotype, lower levels of pity, and higher levels of desired social distance all independently predicted reduced help-giving intentions (see Figure 12.1 below).



**Figure 12.1.** Anger, pity, fear and social distance as mediators in the relationship between the WNS stereotype and help-giving intentions for GAD. Model coefficients and standard errors are presented. Solid arrows represent significant regressions ( $p < 0.05$ ), while broken lines represent non-significant regressions.

The direct effect of WNS endorsement on help-giving intentions was significant ( $p < 0.000$ ), with increased endorsement associated with reduced help-giving intentions (see Table 12.1 below). Significant indirect effects of WNS endorsement on help-giving intentions were also found, indicating five separate significant mediation pathways. WNS endorsement indirectly predicted reduced help-giving intentions through reduced pity (see  $XM_2Y$  in Table 12.1 below). WNS endorsement also indirectly predicted reduced help-giving intentions via increased anger and increased desire for social distance (see  $XM_1M_4Y$ ), increased fear and increased desire for social distance (see  $XM_3M_4Y$ ) and via reduced pity and increased desire for social distance ( $XM_2M_4Y$ ).

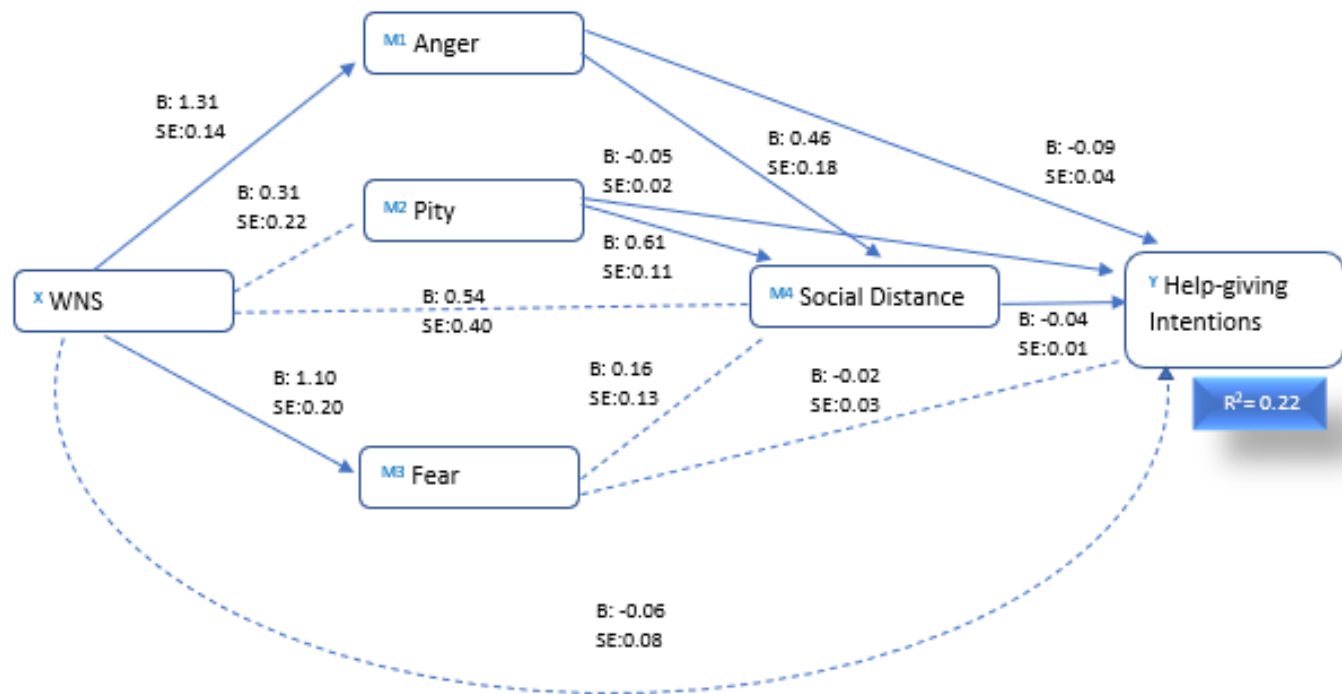
Finally, WNS endorsement significantly predicted reduced help-giving intentions via increased desire for social distance alone ( $XM_4Y$ ).

Table 12.1. Total, Direct and Indirect Effects of WNS endorsement on help-giving intentions for GAD

	<i>b</i>	<i>SE</i>	<i>p-value</i>	
<i>Total Effect</i>	-0.348	0.065	0.0000	
<i>Direct Effect</i>	-0.207	0.071	0.0037	
<i>Indirect Effects</i>	<b>B</b>	<b>BootSE</b>	<b>95% Bootstrap CI lower</b>	<b>95% Bootstrap CI Upper</b>
$XM_1Y$	-0.008	0.038	-0.0868	0.0629
$XM_2Y$	-0.043	0.024	-0.0968	-0.0072
$XM_3Y$	-0.020	0.015	-0.0533	0.0065
$XM_4Y$	-0.028	0.018	-0.0713	-0.0006
$XM_1M_4Y$	-0.026	0.013	-0.0566	-0.0056
$XM_2M_4Y$	-0.009	0.006	-0.0232	-0.0008
$XM_3M_4Y$	-0.006	0.004	-0.0167	-0.0002

*12.1.2. Does endorsement of the WNS stereotype for panic disorder predict prejudice, discrimination and help-giving intentions?*

The model accounted for 22% of the variance in help-giving intentions for panic disorder ( $R^2=0.2196$ ,  $F(5, 194)= 10.92$ ,  $p < 0.000$ ). WNS endorsement was significantly associated with increased anger and fear, but not pity (see Figure 12.2 below). Increased anger and less pity were significantly associated with increased desire for social distance. Anger, pity and desire for social distance all independently predicted help-giving intentions, with higher levels of anger, lower levels of pity, and increased desire for social distance associated with reduced likelihood of helping. WNS endorsement did not independently predict either desire for social distance or help-giving intentions (see Figure 12.2 below)



**Figure 12.2.** Anger, pity, fear and social distance as mediators in the relationship between the WNS stereotype and help-giving intentions for Panic disorder. Model coefficients and standard errors are presented. Solid arrows represent significant regressions ( $p < 0.05$ ), while broken lines represent non-significant regressions.

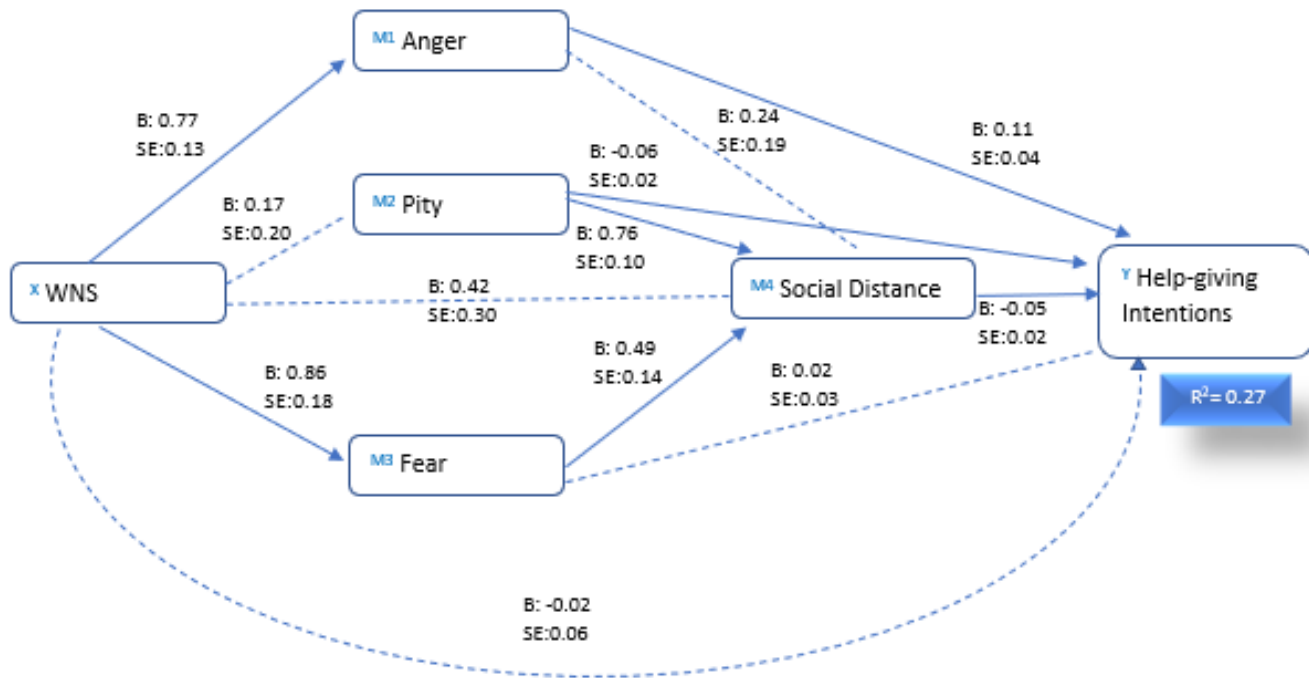
The direct effect of WNS endorsement on help-giving intentions for panic disorder was not significant (see Table 12.2 below). No significant indirect effects of WNS on help-giving intentions were found for panic disorder.

Table 12.2. Total, Direct and Indirect Effects of WNS endorsement on help-giving intentions for Panic Disorder

	<i>b</i>	<i>SE</i>	<i>p-value</i>	
<i>Total Effect</i>	-0.274	0.070	0.0001	
<i>Direct Effect</i>	-0.061	0.078	0.4402	
<i>Indirect Effects</i>	<b>b</b>	<b>BootSE</b>	<b>95% Bootstrap CI lower</b>	<b>95% Bootstrap CI Upper</b>
<i>XM<sub>1</sub>Y</i>	-0.117	0.072	-0.2650	0.0163
<i>XM<sub>2</sub>Y</i>	-0.015	0.013	-0.0438	0.0047
<i>XM<sub>3</sub>Y</i>	-0.021	0.028	-0.0778	0.0350
<i>XM<sub>4</sub>Y</i>	-0.022	0.019	-0.0637	0.0092
<i>XM<sub>1</sub>M<sub>4</sub>Y</i>	-0.024	0.017	-0.0658	0.0002
<i>XM<sub>2</sub>M<sub>4</sub>Y</i>	-0.008	0.007	-0.0230	0.0024
<i>XM<sub>3</sub>M<sub>4</sub>Y</i>	-0.007	0.007	-0.0234	0.0041

12.1.3. Does endorsement of the WNS stereotype for SAD predict prejudice, discrimination and help-giving intentions?

The model accounted for 27% of the variance in help-giving intentions for SAD ( $R^2 = 0.273$ ,  $F(5, 179) = 13.45$ ,  $p < 0.000$ ). WNS endorsement was significantly associated with increased anger and fear for panic disorder, but not pity (see Figure 12.3 below). Anger, fear and pity all significantly predicted desired social distance, with more anger, more fear, and less pity associated with increased desire for social distance. Anger, pity and desired social distance all independently predicted help-giving intentions, with higher anger, lower pity, and increased desire for social distance each associated with reduced help-giving intentions. WNS endorsement did not independently predict help-giving intentions.



**Figure 12.3.** Anger, pity, fear and social distance as mediators in the relationship between the WNS stereotype and help-giving intentions for SAD. Model coefficients and standard errors are presented. Solid arrows represent significant regressions ( $p < 0.05$ ), while broken lines represent non-significant regressions.

The direct effect of WNS endorsement on help-giving intentions for SAD was not significant (see Table 12.3 below). Significant indirect effects of WNS endorsement on help-giving intentions for SAD were found, through two mediation paths. First, WNS endorsement significantly indirectly predicted help-giving intentions via anger, with increased WNS endorsement associated with lower likelihood of helping through increased anger (see  $XM_1Y$  in Table 12.3 below). Secondly, WNS endorsement significantly indirectly predicted help-giving intentions via fear and desired social distance, with higher WNS endorsement associated with lower help-giving intentions through increased fear, and increased desire for social distance (see  $XM_3M_4Y$ ).



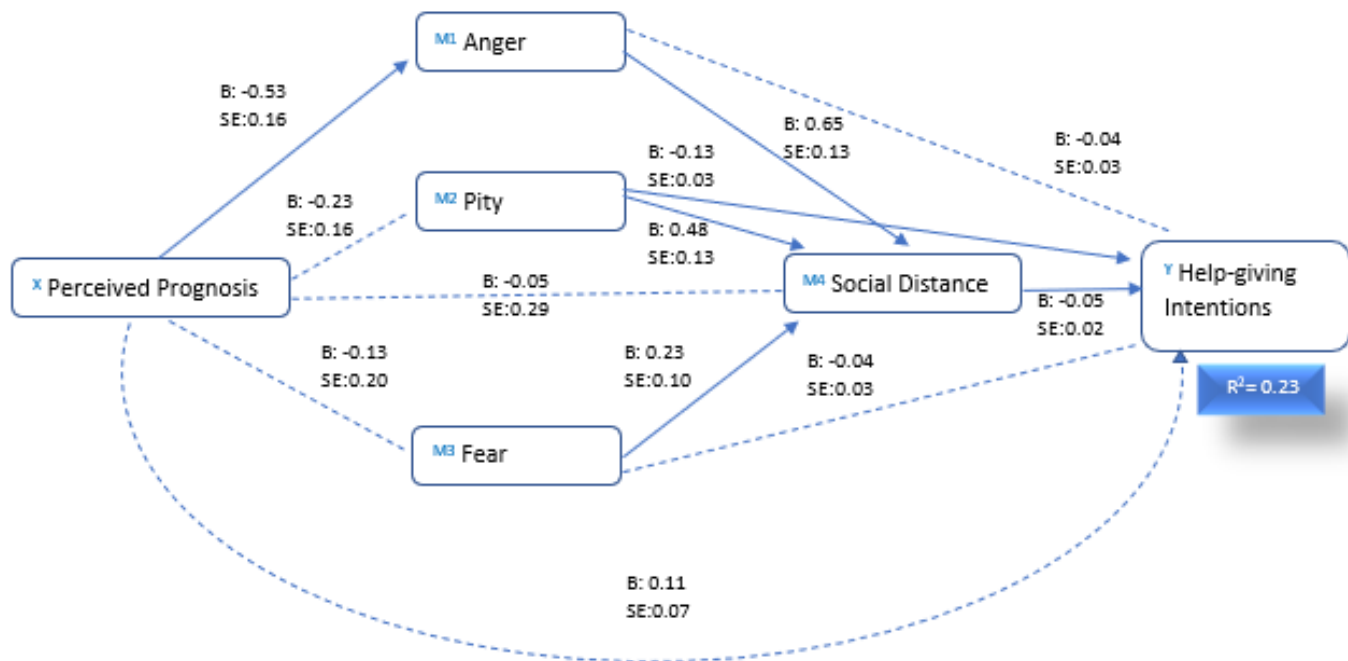
Table 12.3. Total, Direct and Indirect Effects of WNS endorsement on help-giving intentions for SAD

	<i>b</i>	<i>SE</i>	<i>p-value</i>	
<i>Total Effect</i>	-0.153	0.060	0.0121	
<i>Direct Effect</i>	-0.021	0.058	0.7181	
<i>Indirect Effects</i>	<b>b</b>	<b>BootSE</b>	<b>95% Bootstrap CI lower</b>	<b>95% Bootstrap CI Upper</b>
<i>XM<sub>1</sub>Y</i>	-0.081	0.042	-0.1780	-0.0100
<i>XM<sub>2</sub>Y</i>	-0.010	0.014	-0.0443	0.0129
<i>XM<sub>3</sub>Y</i>	0.013	0.026	-0.0365	0.0685
<i>XM<sub>4</sub>Y</i>	-0.019	0.018	-0.5999	0.0085
<i>XM<sub>1</sub>M<sub>4</sub>Y</i>	-0.009	0.010	-0.0339	0.0069
<i>XM<sub>2</sub>M<sub>4</sub>Y</i>	-0.006	0.008	-0.0235	0.0083
<i>XM<sub>3</sub>M<sub>4</sub>Y</i>	-0.019	0.010	-0.0429	-0.0037

## 12.2. Do beliefs about prognosis for anxiety disorders predict prejudice, discrimination and help-giving intentions?

### 12.2.1. Do beliefs about prognosis for GAD predict prejudice, discrimination and help-giving intentions?

The model accounted for 23% of the variance in help-giving intentions for GAD ( $R^2= 0.225$ ,  $F(5, 219)= 12.73$ ,  $p<0.000$ ). Believing that it would take the hypothetical peer longer to feel better was significantly associated with reduced anger for SAD (see Figure 12.4 below). More anger and fear, and less pity were associated with increased desire for social distance (see Figure 12.4). Pity and desired social distance significantly independently predicted help-giving intentions, with higher levels of pity associated with increased help-giving intentions, and higher desired social distance associated with lower help-giving intentions (Figure 12.4).



**Figure 12.4.** Anger, pity, fear and social distance as mediators in the relationship between beliefs about prognosis and help-giving intentions for GAD. Model coefficients and standard errors are presented. Solid arrows represent significant regressions ( $p<0.05$ ), while broken lines represent non-significant regressions.

The direct effect of beliefs about prognosis on help-giving intentions for GAD was not significant. Beliefs about prognosis significantly indirectly predicted help-giving intentions via anger and desired social distance (see XM<sub>1</sub>M<sub>4</sub>Y in Table 12.4 below). Specifically, more negative beliefs about prognosis for GAD were associated with increased help-giving intentions, via reduced anger, and reduced desire for social distance.

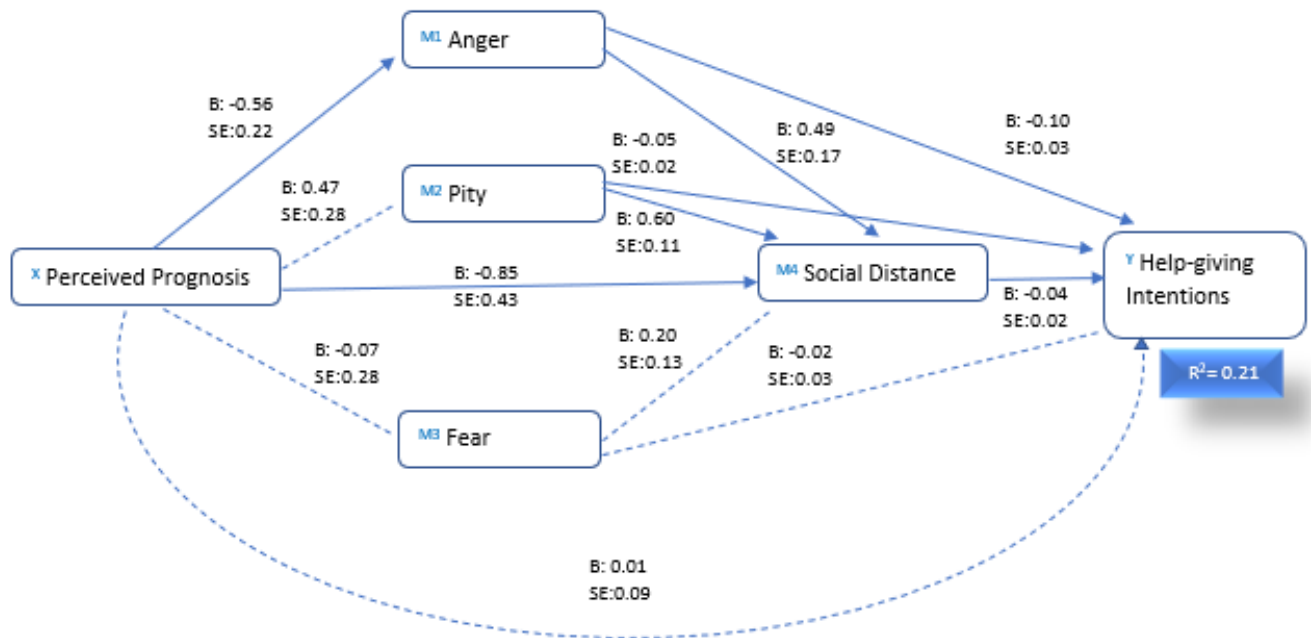
Table 12.4. Total, Direct and Indirect Effects of beliefs about prognosis on help-giving intentions for GAD

	<i>b</i>	<i>SE</i>	<i>p-value</i>	
<i>Total Effect</i>	0.190	0.078	0.0140	
<i>Direct Effect</i>	0.112	0.071	0.1167	
<i>Indirect Effects</i>	<b>b</b>	<b>BootSE</b>	<b>95% Bootstrap CI lower</b>	<b>95% Bootstrap CI Upper</b>
<i>XM<sub>1</sub>Y</i>	0.019	0.021	-0.0181	0.0648
<i>XM<sub>2</sub>Y</i>	0.029	0.023	-0.0116	0.0799
<i>XM<sub>3</sub>Y</i>	0.005	0.009	-0.0094	0.0259
<i>XM<sub>4</sub>Y</i>	0.002	0.018	-0.0369	0.0357
<i>XM<sub>1</sub>M<sub>4</sub>Y</i>	0.017	0.010	0.0028	0.0398
<i>XM<sub>2</sub>M<sub>4</sub>Y</i>	0.006	0.005	-0.0024	0.0159
<i>XM<sub>3</sub>M<sub>4</sub>Y</i>	0.002	0.003	-0.0039	0.0084

### 12.2.2. Do beliefs about prognosis for panic disorder predict prejudice, discrimination and help-giving intentions?

The model accounted for 21% of the variance in help-giving intentions overall for panic disorder ( $R^2 = 0.2087$ ,  $F(5, 193) = 10.18$ ,  $p < 0.0000$ ). Believing that it would take the hypothetical peer longer to recover was significantly associated with reduced anger for panic disorder (see Figure 12.5 below). More anger and less pity were associated with significantly higher desired social distance (see Figure 12.5). Belief that it would take longer to recover was also significantly associated with reduced desire for social distance (although the p-value was marginal here 0.049). Anger and pity both significantly independently predicted help-giving intentions, with increased anger and less pity associated with lower help-giving intentions. Desired social distance also significantly

independently predicted help-giving intentions, with higher desired social distance associated with lower likelihood of helping.



**Figure 12.5.** Anger, pity, fear and social distance as mediators in the relationship between beliefs about prognosis and help-giving intentions for Panic disorder. Model coefficients and standard errors are presented. Solid arrows represent significant regressions ( $p < 0.05$ ), while broken lines represent non-significant regressions.

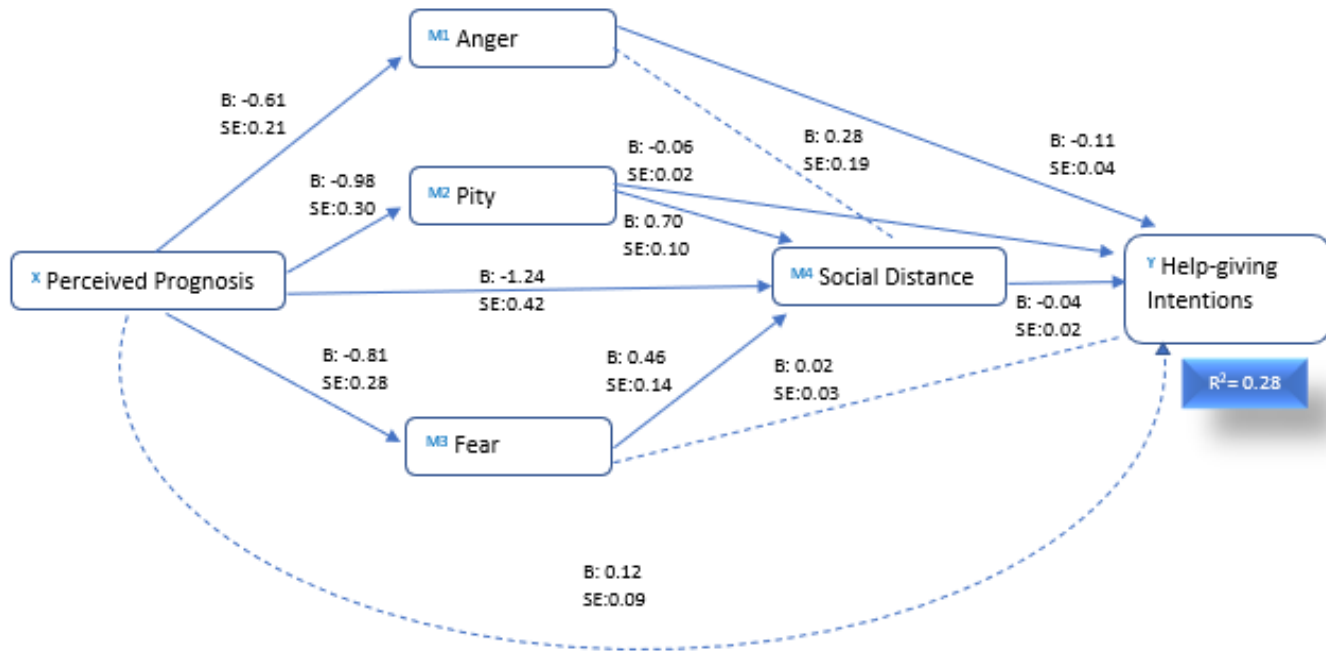
The direct effect of beliefs about prognosis on help-giving intentions for panic disorders was not significant (see Table 12.5 below). No significant indirect effects of beliefs about prognosis on help-giving intentions via prejudice or desired social distance were found for panic disorder.

Table 12.5. Total, Direct and Indirect Effects of beliefs about prognosis on help-giving intentions for Panic Disorder

	<i>b</i>	<i>SE</i>	<i>p-value</i>	
<i>Total Effect</i>	0.146	0.095	0.1247	
<i>Direct Effect</i>	0.010	0.088	0.9096	
<i>Indirect Effects</i>	<b>b</b>	<b>BootSE</b>	<b>95% Bootstrap CI lower</b>	<b>95% Bootstrap CI Upper</b>
<i>XM<sub>1</sub>Y</i>	0.057	0.041	-0.0015	0.1548
<i>XM<sub>2</sub>Y</i>	0.023	0.020	-0.0094	0.0698
<i>XM<sub>3</sub>Y</i>	0.002	0.010	-0.0190	0.0253
<i>XM<sub>4</sub>Y</i>	0.033	0.022	-0.0046	0.0813
<i>XM<sub>1</sub>M<sub>4</sub>Y</i>	0.011	0.009	-0.0005	0.0331
<i>XM<sub>2</sub>M<sub>4</sub>Y</i>	0.011	0.010	-0.0041	0.0344
<i>XM<sub>3</sub>M<sub>4</sub>Y</i>	0.001	0.003	-0.0046	0.0064

12.2.3. Do beliefs about prognosis for SAD predict prejudice, discrimination and help-giving intentions?

Overall, the model accounted for 28% of the variance in help-giving intentions for SAD ( $R^2 = 0.277$ ,  $F(5, 178) = 13.65$ ,  $p < 0.0000$ ). More negative beliefs about prognosis were significantly associated with reduced anger and fear, and increased pity (see Figure 12.6 below). Pity and fear both significantly predicted desired social distance, with more fear and less pity associated with increased desire for social distance (Figure 12.6). Beliefs about prognosis also significantly independently predicted desired social distance, with more negative beliefs about prognosis associated with less desire for social distance. Anger and pity both independently predicted help-giving intentions, with more anger and less pity significantly associated with lower help-giving intentions (see Figure 12.6). Finally, desired social distance also independently predicted help-giving intentions, with higher desired social distance significantly associated with reduced help-giving intentions. Beliefs about prognosis did not independently predict help-giving intentions for SAD (Figure 12.6).



**Figure 12.6.** Anger, pity, fear and social distance as mediators in the relationship between beliefs about prognosis and help-giving intentions for SAD. Model coefficients and standard errors are presented. Solid arrows represent significant regressions ( $p < 0.05$ ), while broken lines represent non-significant regressions.

The direct effect of beliefs about prognosis on help-giving intentions for SAD was not significant (see Table 12.6 below). Significant indirect effects of beliefs about prognosis on help-giving intentions were found for sad, in the form of five different mediation pathways. First, beliefs about prognosis significantly indirectly predicted help-giving intentions via anger (see  $XM_1Y$  in Table 12.6 below), whereby more negative beliefs about prognosis were associated with increased help-giving intentions via reduced anger. Second, prognosis indirectly predicted help-giving via pity (see  $XM_2Y$ ), with more negative beliefs about prognosis associated with increased help-giving intentions via increased pity. Third, prognosis indirectly predicted help-giving intentions via desired social distance, with more negative beliefs about prognosis associated with decreased desire for social distance, and thus increased help-giving intentions (see  $XM_4Y$ ). Beliefs about prognosis also

significantly indirectly predicted help-giving intentions via the beliefs about prognosis > pity > desired social distance > help-giving intentions (XM<sub>2</sub>M<sub>4</sub>Y) and beliefs about prognosis > fear > desired social distance > help-giving intentions (XM<sub>3</sub>M<sub>4</sub>Y) pathways, through which more negative beliefs about prognosis were associated with increased help-giving intentions through reduced fear, increased pity, and decreased desire for social distance (see Table 12.6 below).

Table 12.6. Total, Direct and Indirect Effects of beliefs about prognosis on help-giving intentions for SAD

	<i>B</i>	<i>SE</i>	<i>p-value</i>	
<i>Total Effect</i>	0.327	0.089	0.0003	
<i>Direct Effect</i>	0.117	0.086	0.1768	
<i>Indirect Effects</i>	<b>B</b>	<b>BootSE</b>	<b>95% Bootstrap CI lower</b>	<b>95% Bootstrap CI Upper</b>
<i>XM<sub>1</sub>Y</i>	0.065	0.045	0.0005	0.1744
<i>XM<sub>2</sub>Y</i>	0.056	0.028	0.010	0.1189
<i>XM<sub>3</sub>Y</i>	-0.014	0.026	-0.0733	0.0349
<i>XM<sub>4</sub>Y</i>	0.052	0.033	0.0074	0.1348
<i>XM<sub>1</sub>M<sub>4</sub>Y</i>	0.007	0.009	-0.0041	0.0314
<i>XM<sub>2</sub>M<sub>4</sub>Y</i>	0.029	0.015	0.0049	0.0645
<i>XM<sub>3</sub>M<sub>4</sub>Y</i>	0.016	0.010	0.0016	0.0402

**Discussion based on Attribution Theory and Psychological Essentialism**

**13.1. Introduction**

The present chapter discusses the results of theory-driven mediation models examining the relationship between WNS endorsement and help-giving intentions, mediated by prejudice and desired social distance, and examining the relationship between prognostic pessimism and help-giving intentions, mediated by prejudice and desired social distance. The results of these models will be discussed in the context of attribution theory and psychological essentialism, to provide insight into the relationship between MHL, stigma and help-giving more generally.

**13.2. Does WNS endorsement predict prejudice, desired social distance and help-giving intentions toward people with anxiety disorders?**

In the present study, WNS endorsement by adolescents predicted significantly higher levels of anger and fear for all three clinical vignettes, and significantly less pity for GAD, indicating that WNS endorsement increases prejudice toward clinical anxiety disorders. Higher levels of prejudice in turn predicted significantly greater levels of desired social distance for all three clinical vignettes. WNS endorsement also independently predicted desired social distance for GAD. Prejudice and desired social distance independently predicted significantly lower help-giving intentions for all three clinical vignettes. WNS endorsement also independently predicted lower help-giving intentions for GAD.

These results indicate that WNS endorsement predicted increased prejudice for all three clinical vignettes, that higher prejudice predicted greater desired social distance, and that higher prejudice and desired social distance predicted lower help-giving intentions. These results support the tripartite conceptualisation of stigma proposed by Corrigan and Watson (2002), in which endorsement of negative stereotypes generate negative emotional responses, which in turn lead to behavioural discrimination and avoidance; in this case endorsement of the WNS stereotype for



anxiety disorders was associated with increased prejudice, which in turn was associated with a greater desire for social distance. The relationship between WNS endorsement and pity was only present for the GAD vignette; this may be because the WNS stereotype is particularly linked to lower pity for GAD for some reason - those who endorse the WNS for GAD may be particularly likely to be unsympathetic because they perceive the symptoms as something ordinary the person should be able to deal with - or because the pity subscale reliability was low for this study; future research should retest these models with a more robust pity measure.

#### *13.2.1. WNS effect on help-giving via prejudice and desired social distance*

WNS endorsement significantly indirectly predicted lower help-giving intentions via increased prejudice alone for both GAD and SAD; through decreased pity for GAD, and increased anger for SAD. WNS endorsement also significantly indirectly predicted lower help-giving intentions for GAD and SAD via increased prejudice **and** desired social distance, through increased anger and desired social distance for GAD, less pity and higher desired social distance for GAD, and through increased fear and desired social distance for both GAD and SAD. Finally, for GAD, WNS endorsement also indirectly predicted significantly lower help-giving intentions via increased desired social distance alone. In essence, these results demonstrate that WNS endorsement predicts significantly lower help-giving intentions, via increased prejudice and/or desired social distance, for GAD and SAD, but not panic disorder. Therefore, the hypothesis proposed in Chapter Four, that WNS endorsement would predict help-giving intentions via prejudice and desired social distance, was supported for GAD and SAD, but not for panic disorder.

There was also a significant **direct** effect of WNS endorsement on help-giving intentions for GAD; this may be accounted for by perceived need for help. If symptoms of GAD are seen to be indicative of a personal weakness, they may be less likely to be seen as warranting help; this possibility is reflected in findings which show that low help-seeking and treatment uptake for

anxiety disorders has been associated with misunderstanding symptoms to be due to stress rather than recognising the presence of mental illness (Thompson et al., 2008).

The relationship between WNS endorsement, prejudice, desired social distance and help-giving intentions found in the present study are broadly in line with the tenets of attribution theory. As discussed in Chapter Four, attribution theory posits that responses to people with mental illness, either stigmatising or helping, are informed by beliefs about the causes of mental disorders, and that this relationship between causal beliefs operates through a cognition > emotion > behaviour framework (Weiner, 1980; Weiner, 1985; Rudolph et al., 2004). In particular, beliefs about the controllability of symptoms, and the perceived stability (i.e., duration) of symptoms are important causal dimensions in the context of mental illness (Rudolph et al., 2004; Muschetto & Siegel, 2019). Attribution theory holds that if the cause of a mental illness is seen to be controllable, then the person is blamed for their condition, which leads to negative emotional responses towards them (e.g., increased anger and decreased sympathy), which in turn leads to a negative behavioural response or behavioural intention; e.g., a desire for social distance, and less willingness to help (Rudolph et al., 2004).

While this study did not involve an explicit measure of perceived controllability, or blame, the WNS stereotype can be seen as an approximate measure of perceived responsibility in which the person is seen to be blamed for their symptoms (“not a real medical illness” “could snap out of it if she wanted” “a personal weakness”). As discussed in Chapter Ten, WNS endorsement was significantly associated with higher endorsement of psychosocial causes such as “Overthinking and Daily Stressors”, and lower endorsement of “Internal Psychiatric Causes” (chemical imbalance and mental illness) for GAD and panic disorder, suggesting that adolescents blame vignette characters for their symptoms if they view them as being caused by more controllable causes; these findings are also in line with attribution theory, where “controllable” causes are associated with increased

blame and personal responsibility, with the opposite findings when causes were seen to be uncontrollable, such as biogenetic causes (Dolphin & Hennessy, 2014; Haslam & Kvaale, 2015; Kaushik et al., 2016).

The results of the present study fit the cognition > emotion > behaviour framework laid out by attribution theory. WNS endorsement (cognition) significantly predicted reduced help-giving intentions (behaviour) via prejudice (emotion), and also, via prejudice and desired social distance (behaviour), indicating that effects of perceived blame on one behavioural component (desired social distance) via emotion can also influence another behavioural component (help-giving intentions).

These results add support for attribution theory in accounting for responses to peers with mental illness in the context of clinical anxiety disorders. Previous research has found similar results with regard to adolescents' responses to hypothetical peers with depression (Dolphin & Hennessy, 2014) and in adult responses to depression (Muschetto & Siegel, 2019); both studies found that perceived controllability/personal responsibility significantly predicted less willingness to help and a greater desire for social distance, mediated by negative emotional responses (Dolphin & Hennessy, 2014; Muschetto & Siegel, 2019). Other studies, although not coming from explicitly attributional approaches, have found similar results indicating relationships between causal beliefs, perceived controllability, and stigma (Jorm & Oh, 2009; Reavley & Jorm, 2014). The results also show that attribution theory is compatible with the tripartite model of stigma, as both theories use a framework in which cognition influences behaviour through emotion (Corrigan & Watson, 2002; Rudolph et al., 2004).

The lack of a significant indirect effect of WNS on help-giving via prejudice and social distance for panic disorder in the present study is interesting. The general expected pattern of results is there – WNS endorsement predicts prejudice (anger and fear), prejudice (anger and pity) predicts desired social distance, prejudice (anger and pity) predicts lower help-giving intentions, and desired social

distance predicts lower help-giving intentions – however the beta values between components of prejudice and social distance, prejudice and help-giving, and social distance and help-giving were very small; likely too small for a significant mediation effect. It may be the case that something else is having a bigger effect on help-giving intentions for panic disorder; likely a combination of perceived need for help, recognition, level of concern etc., which were significantly higher for panic disorder than the other vignettes.

### **13.3. Do beliefs about prognosis predict prejudice, desired social distance and help-giving intentions toward people with anxiety disorders?**

In the present study, believing that it would take longer for the vignette character to feel better (i.e., prognostic pessimism) was associated with significantly lower prejudice for all three clinical vignettes; significantly less anger for GAD and panic disorder, and significantly less anger, fear, and greater pity for SAD. As discussed with regard to the WNS-help-giving intentions model above, prejudice significantly predicted desired social distance for all three vignettes. Belief that it would take longer to recover significantly independently predicted reduced desire for social distance for SAD. Prejudice and desired social distance significantly predicted help-giving intentions for all three clinical vignettes. These results indicate that prognostic pessimism significantly predicts less stigma toward people with anxiety disorders; this will be discussed in greater detail below.

#### *13.3.1. Effect of beliefs about prognosis on help-giving via prejudice and desired social distance*

The results showed significant indirect effects of beliefs about prognosis on help-giving intentions via prejudice alone for SAD; belief that it would take longer for the vignette character to feel better was associated with significantly higher help-giving intentions, via reduced anger and increased pity. The results also showed that beliefs about prognosis significantly predicted help-giving intentions via prejudice **and** desired social distance for GAD and SAD. Specifically, belief that it would take longer for the vignette character to recover indirectly predicted increased help-giving intentions via reduced anger and decreased desire for social distance for GAD, and via increased

pity and reduced desire for social distance, and decreased fear and less desired social distance for SAD. Again, no indirect effect of beliefs about prognosis on help-giving intentions were found for panic disorder. No direct effect of beliefs about prognosis on help-giving intentions was found, for any of the clinical vignettes.

Essentially, prognostic pessimism predicted significantly higher help-giving intentions for anxiety disorders, via reduced prejudice and decreased desire for social distance. This is an interesting result. Previous research has discussed beliefs about prognosis in the context of psychological essentialism, which, as discussed in Chapter Four, refers to a tendency to view *'social categories as essence-based "natural kinds" ... groupings that are seen to be fixed and potent sources of inference about their members'* (Haslam & Ernst, 2002, pp.630). Essentialist views conceptualise membership in a particular category, for example, having a mental illness, as being fixed, immutable, enduring, discrete (i.e., separate from others) and natural (Haslam & Ernst, 2002). There is established links between facets of essentialism; belief in biologically-based causes for mental disorders, for example (natural, discrete) has been associated with belief that disorders are hard to treat or cure (enduring, unchangeable) (Haslam & Ernst, 2002). Essentialist thinking has in turn been associated with increased stigma (Levy et al., 1998; Keller, 2006); although not in the specific context of mental illness stigma.

In the present study, the relationships between specific causal beliefs and prognostic pessimism generally support the idea that essentialist beliefs cluster together; belief in "Internal Psychiatric Causes", which frame anxiety disorders as being discrete conditions, with an underlying biological component, was associated with significantly higher prognostic pessimism for GAD and panic disorder.

However, the relationship between prognostic pessimism and stigma/help-giving is much less clear in the literature. In an attribution theory-driven study, Muschetto and Siegel (2019) looked at the relationship between stigma and the causal dimension of perceived stability (i.e., duration of

symptoms), a similar construct to beliefs about prognosis. They found that perceived stability was significantly associated with significantly less willingness to help and significantly higher levels of desired social distance toward depression, and that this was mediated by negative emotion; increased anger and less pity (Muschetto & Siegel, 2019). This is essentially the opposite of what was found in the present study, where prognostic pessimism predicted significantly higher help-giving intentions via decreased prejudice and decreased desire for social distance for GAD and SAD. However, the negative indirect effect of prognosis on help-giving intentions in Muschetto and Siegel (2019) were only found when the vignette character was described as being a close friend or family member, not when the vignette character was described as an acquaintance; the authors note that this is likely due to there being a greater perceived direct impact of duration of depression on the person close to the vignette character than on an acquaintance. Although in the present study the vignette character was described as a friend, it may be that perceived prognostic pessimism does not have the same impact on adolescents, as it is unlikely that they would be exposed to/personally responsible for dealing with a peer's mental illness than if the vignette character was a parent, or sibling; the direct impact of a friend's anxiety disorder on participants would be lower.

Other than the Muschetto and Siegel (2019) study, there are no studies to date examining the relationship between beliefs about prognosis/duration of symptoms and stigma or help-giving directly. A review by Haslam and Kvaale (2015) found that endorsement of biogenetic causes of mental disorders was associated with increased prognostic pessimism, increased desired social distance, and perceptions of dangerousness and the authors argue that this is due to biogenetic causes triggering essentialist thinking. However, they did not examine the relationship between beliefs about prognosis and stigma directly, so comparison to the present study is difficult.

#### 13.4. Summary and conclusions: Anxiety disorders – a unique case?

The results of the models discussed above indicate that perceived responsibility for symptoms of anxiety disorders (i.e., WNS endorsement) significantly predicts lower help-giving intentions, via increased prejudice and increased desire for social distance for GAD and SAD. They also show that prognostic pessimism significantly predicts **higher** help-giving intentions, via decreased prejudice and decreased desire for social distance.

Both WNS endorsement and prognostic pessimism in the present study were significantly predicted by endorsement of specific causal beliefs; essentially belief in causes that imply a discrete condition (mental illness, chemical imbalance) were associated with significantly lower WNS endorsement, and higher prognostic pessimism for anxiety disorders. Lower WNS endorsement, and higher prognostic pessimism can then be seen to result in significantly higher help-giving intentions for GAD and SAD, mediated by prejudice (emotion) and desired social distance.

Therefore, it seems that for anxiety disorders, the perception/understanding of anxiety symptoms as discrete conditions rather than as an extension of ordinary experience may be important for reducing stigma and increasing help-giving intentions. This may explain why no indirect effect of either prognosis or WNS endorsement on help-giving intentions was found for panic disorder; because the symptoms of this disorder are so clearly out of the ordinary, whereas symptoms of GAD and SAD may be more easily seen to simply be part of the spectrum of ordinary experience. This suggests that education framing anxiety disorders as being discrete conditions distinct from routine stress or worry may have implications for reducing stigmatising responses and increasing help-giving intentions toward peers with anxiety disorders.

However, this could be a double-edged sword; higher endorsement of “Overthinking and Daily Stressors” was associated with significantly lower endorsement of the strange stereotype for SAD,

for example, in the present study, indicating that while conceptualising symptoms of clinical anxiety disorders as being part of life can increase stigma in some forms, it can decrease it in others. Clearly more research is needed to replicate these results. Future research should also examine experimentally whether manipulating causal beliefs, perceived responsibility and blame, and beliefs about prognosis causes corresponding changes in prejudice, desired social distance and help-giving, as well as examining the effect on other stereotypes.

The results discussed in this chapter illustrate for the first time in the context of clinical anxiety disorders how MHL (causal beliefs, beliefs about prognosis), stigma (WNS, prejudice, desired social distance) and help-giving intentions influence each other, in the narrow context of attribution theory and psychological essentialism. However, it is likely that these relationships themselves are influenced by other components of MHL; Chapter 10 details the effect of ability to recognise anxiety disorders on endorsement of particular causal beliefs, beliefs about prognosis, and endorsement of the WNS stereotype, for example. Future research should also evaluate the role of these other components of MHL on the relationships described in this chapter.



### **14.1. The big picture: What does this research tell us about adolescents' knowledge, beliefs, and feelings about clinical anxiety disorders in a hypothetical peer?**

To date, no studies have examined knowledge and beliefs about multiple clinical anxiety disorders in an adolescent sample. Anxiety literacy has been neglected in the MHL literature in general, but particularly in adolescent samples, and particularly in the Irish context. This is a large research gap, given that anxiety disorders are the most prevalent group of mental disorders among adolescents (Kessler et al., 2005; Kessler et al., 2007; Bandelow & Michaelis, 2015), with a profound impact on individual functioning in a wide range of domains, as well as on society more generally (Mendlowicz & Stein, 2000; Wittchen & Jacobi, 2005; WHO, 2017). Adolescence is a particularly important period in the study of anxiety disorders and the public's understanding of them; the presence of anxiety disorders in adolescence is predictive of persistence of those disorders into adulthood, along with a range of other negative outcomes, from lower quality of life, educational and professional problems, and comorbid depression and substance use problems (Woodward & Fergusson, 2001; Cannon et al., 2013; Essau et al., 2014; Wolitzky-Taylor et al., 2014). Adolescence thus represents a real opportunity for early intervention, which is vital given that clinical anxiety disorders are frequently subject to long lag times between symptom onset and treatment-seeking, and often go undiagnosed (ESEMED, 2004; MacKenzie et al., 2012; Johnson & Coles, 2013; Bellati et al., 2016). In order to improve recognition and help-seeking for anxiety disorders, at as early a point in their development as possible, we must first determine where the gaps in knowledge and understanding of anxiety disorders are, especially in young people.

Adolescence is also a key period in the context of MHL more generally, due to the preference for peer support among adolescents when experiencing difficulties (Sheffield et al., 2004; Amarasuriya et al., 2017). However, to date, we know little about how adolescents conceptualise, respond to, and offer to help with symptoms of clinical anxiety disorders in their peers. As with interventions

aimed at improving recognition and help-seeking for anxiety disorders, before developing interventions aimed at improving adolescent help-giving intentions and stigmatising responses toward peers with anxiety disorders, we must first assess their current level of knowledge to identify areas for improvement.

The present study provides a comprehensive picture of adolescents' knowledge of GAD, panic disorder, and SAD, as well as of their stigmatising responses and help-giving intentions. Overall, the results indicate a difference between adolescents' explicit knowledge of anxiety disorders (recognition, knowledge about causes, knowledge of appropriate help), which was low, and their more instinctive understanding of anxiety disorders (recognising that they warrant concern, help, and will not spontaneously resolve quickly), which was relatively high. The data relating to adolescents' labelling of symptoms of clinical anxiety disorders, particularly GAD, and beliefs about the causes of anxiety disorders, imply a level of minimisation of these conditions by adolescents, largely conceptualising them in everyday terms, and as being caused by stress or "thinking too much". This study thus supports and builds upon the results of limited research in adult samples which has shown the public understanding of clinical anxiety disorders, particularly GAD and SAD, to be low, that they are generally not perceived to be mental illnesses, and are generally not seen to warrant professional intervention (Coles & Coleman, 2010; Coles et al., 2015). The results also mirror findings among people experiencing clinical anxiety disorders who have been found to misperceive their symptoms as being stress (Thompson et al., 2008).

The present study also provides a novel insight into the stigmatisation of clinical anxiety disorders by adolescents, demonstrating that while overall stigma was low, a significant minority of participants did express stigmatising responses toward hypothetical peers with clinical anxiety disorders, endorsing the WNS, dependency and odd/strange stereotypes in particular, and expressing fear, a lack of pity, and a desire for social distance from the clinical vignette characters.

More positively, help-giving intentions and confidence in offering help with anxiety disorders were high across the sample.

Anxiety literacy was highest, and stigma was lowest for panic disorder. This highlights a tendency among the sample to take this condition the most seriously, as compared to GAD and SAD, which were conceptualised as being stress, nervousness, or shyness, among others. It may be the case that the symptoms of GAD and SAD are particularly likely to be minimised and framed as everyday experience rather than clinical disorders due to the nature of their symptoms; in contrast the more visible and alarming symptoms of panic disorder seem to be less easily minimised by participants, suggesting that the nature and content of the anxiety displayed by peers may be particularly important in determining how symptoms of anxiety disorders are framed and responded to by adolescents. Male adolescents had significantly worse anxiety literacy, significantly higher stigma, and significantly lower help-giving intentions across the three clinical anxiety disorders.

#### **14.2. What does this research tell us about the relationship between components of MHL, stigma and help-giving intentions?**

The present study examined relationships between components of anxiety literacy, stigma, and help-giving intentions, on an exploratory basis and to examine whether relationships previously demonstrated in the context of other mental illnesses would be found for anxiety disorders. It also tested specific mediation models based on attribution-theory and psychological essentialism to attempt to model the processes underlying specific relationships between components of MHL, stigma and help-giving.

The findings point to greater understanding of anxiety disorders being associated with less stigmatising responses, and that recognition and belief that symptoms were caused by a chemical imbalance or mental illness were associated with significantly less stigma; stereotypes, prejudice and discrimination. Essentially, this points to a level of recognition that symptoms are indicative of a discrete psychological condition, distinct from routine worry or stress, being important for

reducing stigma, likely due in part to decreased perceptions of blame and personal responsibility; if participants frame symptoms as being non-clinical, then they may believe that the hypothetical peer should be able to cope with them.

The results of the PROCESS analyses indicate that beliefs about the personal responsibility of vignette characters for their symptoms (i.e., WNS endorsement) and duration of anxiety disorders may be particularly important in influencing stigmatising responses and help-giving intentions, influencing desired social distance and help-giving intentions via emotion, for GAD and SAD.

The model examining the effect of WNS stereotype endorsement on help-giving intentions also provides support for the tripartite conceptualisation of stigma (Corrigan & Watson, 2002), by demonstrating that stereotypes, prejudice and discrimination are linked, and also shows that stigma in turn is related to help-giving intentions.

#### **14.3. Areas for improvement: Implications for efforts aimed at improving help-seeking for anxiety disorders, increasing MHL, and reducing stigma**

The results of this study have implications for informing future efforts aimed at educating young people about anxiety disorders, improving help-seeking by those experiencing anxiety disorders, and reducing stigma and improving help-giving intentions toward adolescents with clinical anxiety disorders.

While adolescents expressed concern and understanding of the impact of symptoms of clinical anxiety disorders, the study identified significant gaps in adolescents' explicit knowledge, specifically in their ability to recognise the three anxiety disorders included in the study, in their knowledge of the causes of clinical anxiety disorders, and in the quality of their help-giving suggestions, all of which should be targeted by future interventions aimed at improving adolescent MHL. School-based mental health literacy programmes have been shown to be effective in improving MHL and reducing stigma (Ma, Anderson & Burn, 2022). Other programmes, such as the teen Mental Health First Aid programme have already shown promising increases in both

recognition and adequate help-giving suggestions for vignette scenarios depicting adolescents at risk of suicide (Hart et al., 2020); similar programmes targeting clinical anxiety disorders specifically should be developed.

Recognition of anxiety disorders, in particular, has implications for help-seeking for anxiety disorders; if a person cannot recognise the problem, then it is unlikely that they will seek out and access appropriate help; indeed, people with clinical anxiety disorders frequently misinterpret their own symptoms of being down to situational stress, which likely contributes to the delay in help-seeking (Thompson et al., 2008; Johnson & Coles, 2013; Bellati et al., 2016). Knowledge relating to recognition, beliefs about causality and appropriate help-giving suggestions all have implications for how adolescents perceive symptoms of anxiety disorders in their peers, and the kinds of help-giving actions they are likely to take. Educational interventions then, for GAD and SAD in particular, should emphasise the difference between ordinary worry and anxiety and clinical disorders, with a focus on the severity, impact, and duration of symptoms (APA, 2013). Education around the multifactorial aetiology behind anxiety disorders would provide context for the need for and usefulness of professional sources of help, such as psychotherapy and pharmacological treatments (Samouilhan & Seabi, 2010; Zwanzger & Deckert, 2010).

There was a clear issue with the quality of help-giving suggestions for anxiety disorders in the sample, with a large majority focused on informal strategies, such as emotional support, distraction and exercise. While adolescents cannot be expected to treat or manage peers' mental illnesses, they can be educated about the need to involve a parent or other trusted adult where appropriate, and the need for professional help; if there is a better baseline level of endorsement for professional help for anxiety disorders among adolescents, then it is more likely that they will suggest such sources of help if a peer is experiencing symptoms of anxiety. It must be noted, however, that there is an issue with provision of public mental health services in Ireland, particularly in adolescent services (Coyne et al., 2015; Cullen et al., 2017; McNicholas, 2018;

McNicholas et al., 2020), so any efforts aiming to improve uptake of effective treatments for anxiety disorders must first ensure that the services and treatments are available and accessible to adolescents who need them.

The study also identified problematic stigmatising responses toward people with anxiety disorders in a subset of the sample. Stigma-reduction efforts should target the most frequently-endorsed stereotypes; WNS, dependency, and odd/strange, particularly with regard to GAD. Reducing stereotypical beliefs may in turn reduce negative emotional responses and desired social distance (Corrigan & Watson, 2002; Silke et al., 2016). The results from the PROCESS analyses demonstrate that the WNS stereotype may be a particularly useful target for challenging with the aim of improving prejudice, desired social distance and help-giving intentions. Given the relationships found in the present study between components of MHL (recognition, causal beliefs) with stigmatising responses, it is also possible that improving anxiety literacy may itself reduce anxiety stigma, although more research is needed.

Finally, any future interventions aiming to improve MHL and stigma regarding anxiety disorders should focus in particular on male adolescents, who had significantly worse knowledge about anxiety disorders, stigmatising responses, and help-giving intentions than their female counterparts. Recent research has shown promising results from brief interventions aimed at increasing knowledge of depression and anxiety, and help-giving intentions in male adolescents (Liddle, Deane, Batterham & Vella, 2019), suggesting that the gender gap in MHL can be effectively addressed.

#### **14.4. What does the research tell us about MHL as a concept?**

The present study underscores the importance of measuring multiple components of mental health knowledge, as evidenced by the fact that adolescents in this study had a good understanding of anxiety disorders on some items, but not others. A measure of MHL focusing solely on more “academic” knowledge of anxiety disorders would not have captured the baseline

level of understanding among adolescents that symptoms of anxiety disorders are a cause for concern, impact significantly on functioning, and will not resolve quickly. In this way, the study highlights a difference between types of understanding. The results outlined here illustrate that mental health knowledge is nuanced, and goes beyond simple recognition. That said, the study also illustrates that despite differences in MHL across components, generally, good knowledge on one component is associated with good knowledge on another; ability to recognise anxiety was associated with greater perceived impact of symptoms, higher levels of concern, and greater endorsement of Internal Psychiatric Causes” - as causes. Causal beliefs in turn were associated with type of help suggested; belief in situational or controllable causes were associated with significantly lower odds of suggesting formal help or involving a parent. This suggests that mental health knowledge is not a singular entity, but rather is made up of distinct but interrelated components.

Spiker and Hammer (2018) argue that MHL should be conceptualised as a multi-construct theory, comprising mental health knowledge, stigma and other factors, rather than a multidimensional construct, in a pushback against recent studies which have included stigma as a part of MHL. In this conceptualisation, mental health knowledge and stigma are distinct but interrelated; the present study takes a similar position, referring to MHL in this context solely to refer to mental health knowledge (i.e., knowledge about disorders, their impact, and treatment options), whereas stigma relates to beliefs and inferences made about the *person* with an anxiety disorder (stereotypes), negative emotional reactions to the person (prejudice) and desired social distance from the person (discrimination). However, as Spiker and Hammer (2018) note, there is as yet no consensus as to what components should be included within the construct of mental health knowledge itself. The present study highlights the usefulness of using a comprehensive measure of MHL that aims to capture different aspects of mental health knowledge to obtain a wide-ranging overview of adolescents’ conceptualisations of mental illness. However, future research should focus on the

nature of mental health knowledge, the relationship between different aspects of this knowledge, and the processes underlying these relationships.

#### **14.5. Limitations and suggestions for future research**

The study has a number of limitations. First, it is cross-sectional in nature, so no firm inferences can be drawn as to the direction of relationships between MHL components, or between MHL, stigma, and help-giving intentions. Future research could mitigate this by manipulating aspects of MHL or stigma, and observing any change in other components. Second, while the measure was comprehensive, as a relatively long self-report survey comprised largely of Likert-scale measures, which was completed within a set time period, there is a lack of depth of understanding as to why adolescents believe the things they do about anxiety disorders, where they get their information about mental health from, etc. Future qualitative studies could aim to investigate some of the nuances of MHL and stigma that are necessarily lost in a largely quantitative study.

Difficulties in recruitment of participants necessitated the use of convenience sampling and as such, the present sample is not representative of adolescents in Ireland; in particular, there is a lack of representation from more rural settings. Future research in this area should aim to capture data from a more diverse set of schools, and to obtain representative samples. As a result of the sampling difficulties, the study also had a gender imbalance, with a larger proportion of girls to boys. Given the gender differences in MHL, stigma, and help-giving intentions observed in this study, future research should aim to replicate these with a more gender-balanced sample.

Additionally, two participants reported their gender as fluid, and one participant did not report their gender; as this number was so low, these participants were excluded from the comparisons of MHL and stigma across gender. Qualitative work could address this gap and ensure that the voices of minority groups and their understanding and experience of mental illness is captured in research, which is vital, given the high incidence of mental health problems among LGBTQ youth (Higgins et al., 2016). Additionally, the internal consistency of the pity subscale was low, and as



such analyses relating to adolescents' levels of pity, and the role of pity on desired social distance and help-giving intentions must be interpreted with caution. Future research should attempt to replicate the results using a more robust measure of pity.

Finally, it must be noted that the MHL literature to date is somewhat limited by inconsistent measures and conceptualisations of the construct used across studies. The literature is largely not grounded in any particular theoretical framework, and the majority of studies examining the role of MHL in stigma and help-giving intentions do not attempt to account for or explain the processes underlying these relationships. It is likely, given the complexities involved in MHL, stigma, and help-giving intentions, the multiple, often inter-related components within each construct, and the influence of other factors, such as gender and previous contact with a person with mental illness, that many distinct processes are involved in the various relationships between the constructs. The present study focused on an initial exploration of anxiety literacy in adolescents and replication of relationships between constructs found for other mental illnesses. Because of the complexity involved, it is highly unlikely that one overarching theory can account for all of the underlying processes involved in the interactions between MHL, stigma, and help-giving intentions; for this reason, the present study focused on modelling two specific, theory-driven relationships; the effect of the WNS stereotype on help-giving intentions via emotion, and the effect of prognostic pessimism on help-giving intentions via emotion.

Future research should focus on accounting for and exploring the underlying processes of relationships between other components of MHL, stigma, and help-giving intentions, in a theory-driven way. Future research can also build on the findings of the present study by directly comparing anxiety literacy and stigma to that of other mental illnesses in adolescents. Future studies should also attempt to examine the factors underlying the gender differences in MHL, stigma and help-giving intentions, as this is a major gap in the existing research literature.

## **14.6. Conclusion**

The present study takes a step in addressing a major gap in current understanding of MHL, examining knowledge, stigma and help-giving intentions toward clinical anxiety disorders, which are understudied in the MHL literature in general, and almost entirely unexamined in adolescents. The study represents, to the best of the author's knowledge, the first study examining and comparing MHL across these particular anxiety disorders in an adolescent sample, and as such provides a valuable initial insight into how adolescents think about and respond to symptoms of clinical anxiety disorders in their peers. The study utilised a wide-ranging measure of mental health knowledge, and examined the three components of the tripartite model of stigma (Corrigan & Watson, 2002), aiming to obtain a comprehensive picture of adolescent's knowledge, beliefs, and attitudes to clinical anxiety disorders. Unlike the majority of studies examining the relationships between MHL, stigma, and help-giving intentions, the present study aimed to account for these relationships by modelling the underlying processes, informed by the literature on attribution theory and psychological essentialism (Weiner, 1980; Weiner, 1985; Haslam & Ernst, 2002; Rudolph et al., 2004). The study demonstrated a complex picture of how adolescents understand and respond to symptoms of anxiety disorders in a hypothetical peer, and suggest that while adolescents are able to recognise that symptoms warrant concern and intervention, there are significant gaps in their knowledge which must be addressed in order to increase help-seeking by those experiencing anxiety disorders, and improve stigmatising and help-giving responses towards those experiencing anxiety disorders.

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# Overthinkers, attention-seekers and wallflowers: peer perceptions of clinical anxiety disorders in adolescence

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## Abstract

**Purpose** – The purpose of this paper is to investigate peer perceptions and stereotypes towards adolescents with clinical anxiety disorders.

**Design/methodology/approach** – The study utilised an exploratory qualitative design, using short vignettes to investigate perceptions of three clinical anxiety disorders (panic disorder, generalised anxiety disorder and social anxiety disorder) and a control scenario, situational stress. Responses were analysed using thematic analysis.

**Findings** – The results of the study suggest that previously established mental illness stereotypes (e.g. fear and dangerousness) may not be relevant to those with anxiety disorders, with perceptions of personal responsibility, weakness and social abnormality salient instead. These results suggest that stigma interventions should be tailored to disorder and age group.

**Practical implications** – Perceptions of weakness and blame have been associated with higher levels of discrimination, meaning people with anxiety disorders may be particularly vulnerable. Similarly, the negative social perceptions may be particularly damaging in adolescence, when successful peer relationships are vitally important. The results suggest specific stereotypes to target in stigma reduction campaigns for anxiety disorders, which may not be addressed by existing interventions.

**Originality/value** – There is a significant lack of research on both adolescent mental illness stigma in general, and anxiety stigma specifically. This study aimed to begin to address that gap, and found results that suggest, in line with previous work, that perceptions of blame may be more common for anxiety disorders, with negative social perceptions also reflecting the unique importance of peer relationships for adolescents.

Further research should explore these stereotypes in more detail.

**Keywords** Stigma, Anxiety, Adolescent mental health

**Paper type** Research paper

Clinical anxiety disorders are highly prevalent, affecting some 264m people across all regions of the world (Baxter et al., 2013; Steel et al., 2014; WHO, 2017). They include specific psychiatric conditions such as panic disorder, social phobia and generalised anxiety disorder (GAD), all of which are characterised by persistent, excessive and undue fear or worry that presents with disturbances to normative behaviour (APA, 2013). As symptoms are typically recurring or experienced over prolonged periods, anxiety disorders are often considered to be more chronic than episodic, and result in significant functional impairment for those affected (Mendlowicz and Stein, 2000), being ranked the sixth largest contributor to global disability (WHO, 2017).

As with other common mental illnesses, anxiety disorders typically first present in childhood or adolescence (Craske and Stein, 2016; Kessler et al., 2005). This onset presents a significant burden across many domains of young lives (Balazs et al., 2013; Rapee et al., 2009) in addition to predicting future psychopathology. As such, the importance of identifying children and adolescents at risk and providing interventions early is significant. However, research suggests that the majority of young people experiencing anxiety symptoms delay seeking help or do not seek help at all (Essau, 2005; Kessler et al., 2005). One of the key barriers to help-seeking

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that they report is perceived mental illness stigma (Gulliver et al., 2010; Mukolo et al., 2010; Rickwood et al., 2005). In addition to impacting help-seeking, mental illness stigma may negatively influence the help-giving responses of young people when someone close to them needs support with a mental health problem (Yap and Jorm, 2011).



Stigma is defined as discrimination against a person based on their possession of some socially “undesirable” characteristic (Link and Phelan, 2006). It is a process whereby the detection of cues that a person has, for example, a mental illness, activates stereotypes about them, and, if these stereotypes are negative and endorsed, prejudice or discrimination against that person can follow (Corrigan, 2004; Corrigan and Watson, 2002). This tripartite conceptualisation of stigma is frequently referred to in the adolescent mental health literature and has been empirically endorsed (e.g. Silke et al., 2016).

Relatively few studies have examined mental illness stigma with anxiety as a specific focus (Alonso et al., 2008; Calear et al., 2016), or incorporate anxiety as a target disorder along with other mental health conditions (Crisp et al., 2000; Reavley and Jorm, 2011), leading to a major gap in the research. Significantly, existing studies generally suggest that the stereotypes endorsed for anxiety disorders may be qualitatively different to those of other mental illnesses, and that adolescents’ stigmatising responses, compared with adults’, may be more focused on the social implications of mental illness. These studies are outlined further in the following paragraphs.

### Anxiety stigma research: beyond fear

The majority of early studies on mental illness stigma focused on reactions towards depression and schizophrenia in the general public and noted a pervasive association between mental illness and stereotypes of violence, dangerousness and unpredictability (Angermeyer and Matschinger, 1996; Phelan and Link, 1998). It was thus speculated that the fear generated by such stereotypes was a major reason for stigmatising behavioural responses such as social exclusion (Link et al., 2004). However, it appears that beliefs about dangerousness and unpredictability are either not endorsed in relation to people experiencing forms of anxiety (Crisp et al., 2000), or at least to a lesser extent when compared with other mental illnesses like schizophrenia (Wood et al., 2014). Thus, the pattern of anxiety stigma in adult populations may not be comparable to that of other mental health conditions, even with regard to the most commonly endorsed stereotypes.

As with the findings on adult stigma, adolescents and young people were less likely to endorse perceptions of dangerousness and unpredictability for people with social anxiety when compared with psychosis (Jorm and Wright, 2008; Reavley and Jorm, 2011). Instead, they associate social phobia with personal weakness and believe that the condition is “not a real medical illness” (Reavley and Jorm, 2011). Similar conclusions were drawn from a study with Japanese adolescents reported by Yoshioka et al. (2014) where the “dangerous/unpredictable” stereotype was least likely to be endorsed for a person with social phobia when compared with people described as showing symptoms of schizophrenia or depression. Other researchers have found that endorsement of the “weak not sick” belief in response to anxiety is consistently associated with both personal and perceived stigma, a desire for social distance (Reavley and Jorm, 2014; Yap et al., 2011), and lower help-seeking intentions and less positive beliefs about the efficacy of professional help (Yap et al., 2011). It may be the case then that anxiety is more likely to be associated with perceptions of blame and personal responsibility than other disorders. Such perceptions are major contributing factors to negative attitudes and discriminatory behavioural intentions in the child and adolescent mental health literature (Hennessy et al., 2008; Kaushik et al., 2016).

### Stigma in adolescence – qualitatively different?

The nature and consequences of mental illness stigma in childhood and adolescence are less researched and, as a result, less understood. However, studies suggest that even very young children can identify behaviour that deviates from “the norm” and stigmatise others (Hennessy et al., 2008; Wahl, 2002). In some instances, these negative responses can intensify as children



grow older (Griffiths et al., 2008; O'Driscoll et al., 2012; Swords et al., 2011). Children with mental health difficulties have also reported being on the receiving end of negative stereotypes, prejudice and discrimination (Heary et al., 2014, 2017). Peer relationships for these young people can be problematic, and research indicates that mental illnesses are associated with peer rejection or victimisation at higher rates than physical and intellectual disabilities or chronic illness (Heary et al., 2014). Developmentally, acceptance and positive peer relationships are vital to children's emerging sense of self, and rejection can adversely affect their psychological and physical wellbeing (Kroger, 2007; Rubin et al., 2015).

It may be the case that adolescents' stereotypical beliefs about peers with a mental illness are particularly focused on perceived negative social functioning. For example, qualitative work by O'Driscoll et al. (2015) with Irish adolescents found that unique stereotypes and prejudice were offered by participants when reasoning about the exclusion of peers with ADHD or depression. Specifically, it was proposed that peers with mental illness may be rejected because they may not conform to the norms and reciprocity expectations that young people apply to their friendships. These findings suggest that discrimination and social rejection towards adolescent peers with mental illness goes beyond fear of violence, which is typically found to have a key role in the adult literature, as outlined above.

### The present study

The stigmatisation of children and adolescents with mental health difficulties is a formidable impediment in improving their quality of life and treatment outcomes. Research efforts are growing to understand stigma and how it can be reduced to improve outcomes for those with mental disorders. However, what is known about stigma from other mental health conditions cannot be simply mapped onto anxiety disorders, and research with adults does not neatly translate to inform us about the phenomenon of stigma in child or adolescent populations. Clearly, much more work is needed, specifically focusing on distinct clinical anxiety disorders, and particularly in children and adolescents.

In an attempt to address the lack of research into anxiety stigma, particularly in adolescence, as well as to provide a foundation for more in-depth research on this topic, an exploratory qualitative study was conducted with a sample of Irish adolescents, as part of a larger study into anxiety literacy, stigma and help-giving responses. Anxiety is not one condition, but a group of disorders. It cannot be assumed that stigma associated with one subtype is the same for another, and yet there are essentially no studies comparing stigma across the anxiety disorders, representing a significant gap in the research. As such, the aim of the present study was to assess perceptions of panic disorder, GAD and social anxiety disorder, as these are among the most common mental illnesses in young people, and often first emerge in adolescence (Craske and Stein, 2016).

As anxiety disorders typically increase in prevalence from mid-late adolescence, the study focused on young people aged 16 years and over (Beesdo-Baum and Knappe, 2012).

### Method

#### Data and analysis

A convenience sample of 25 participants (20 female, 5 male) aged 16–17 years were recruited from a secondary school in the Leinster region of Ireland. A total of 92 per cent of participants identified themselves as White Irish, which is broadly in line with the 82 per cent of the population identified as White Irish in the most recent Irish Census (Central Statistics Office, 2016). No exclusion criteria were applied. Participants were presented with a series of three clinical vignettes, describing young people with panic disorder, GAD and social anxiety disorder, and one non-clinical control vignette describing a young person experiencing situational life stress. Vignettes were developed in accordance with DSM-V diagnostic criteria (APA, 2013) and were validated by clinical trainee psychologists. After reading each vignette, participants answered a series of questions that tapped into mental health literacy, stigma (including stereotypes, prejudice and discrimination) and help-giving intentions. For the purposes of this analysis, responses to the open-ended question "What words (and phrases) do you think most people would use to describe someone like (the character)?" for each vignette were analysed using thematic analysis as per Braun and Clarke (2006) in order to capture a rich overall description of the entire data set.

Data were manually coded at a semantic level, with the assumption that responses to the question accurately reflected the perspective of participants. The data set was read through in its entirety twice, before coding began. A

total of 39 initial codes were generated by the researchers during this phase, which were refined and then grouped into nine themes. All coded data extracts were then collated under each theme and re-read, and the themes reviewed for internal homogeneity and external heterogeneity (i.e. ensuring that themes are sufficiently distinct from each other) as per Braun and Clarke (2006), resulting in the collapse of a number of smaller themes into single, broader themes.

## Results and discussion

Data analysis resulted in three major overarching themes “Socially abnormal”, “Blame and dismissiveness” and “Clinical vs non-clinical conceptualisations”, with a number of subthemes. While the focus of this study is to assess common perceptions across the three clinical anxiety disorders, where particularly notable, comment will be made on how the themes apply to specific conditions.

### “Socially abnormal”

The first major theme which ran throughout the data set was “Socially abnormal”, a theme which marks those with clinical anxiety disorders negatively in terms of social functioning. This theme has a number of distinct subthemes.

The first, “Not Like Me” refers to responses in which participants mark the vignette character as being different from themselves, outsiders of sorts. Examples of responses which fall under this subtheme include “freaky, weird”, “weirdo, loser”, “strange, odd” and “creep, loner”. These responses were almost exclusively given for the three clinical vignettes, with only one “loser” response being assigned to the character in the control scenario. These perceptions suggest that symptoms of anxiety may be perceived as being an indicator of social abnormality, creating a distance between the person with anxiety and those without symptoms.

The second subtheme, “Not Good Company” relates to negative perceptions of vignette characters’ social functioning, with respondents labelling them “bitchy, rude”, “awkward” and “closed off”. It appears that symptoms of anxiety can be interpreted in terms of how they negatively affect social interactions, with respondents indicating concern about the implications that anxiety symptoms have on friendships. For example, participants noted that the character with panic disorder would be perceived as “rude, not wanting to see her friends” and that she “never comes anywhere”. In addition, two respondents expressed the opinion that the character with GAD who displayed extreme worry about a number of issues would be seen by her peers as being “a try hard, a teacher’s pet” and a “teacher’s pet who worries over exams”.

The final subtheme relating to the “Socially abnormal” theme is “Wallflower”. A number of respondents indicated that the avoidance behaviours exhibited by the vignette character with panic disorder may be perceived as shyness by peers, with answers given like “embarrassed” “shy” and “self-conscious, cares a lot of what others think”. This “shy” description was a very common perception of the character with social anxiety disorder, with the symptoms being framed in colloquial language relating to social incompetence; many respondents said this character would be seen as “shy”, “insecure, quiet”, or someone who “lacks self-confidence” or is “embarrassed easily”, suggesting that these young people are being seen as prototypical “wallflowers” rather than having a clinical mental illness.

Taken together, these subthemes indicate a particular tendency among the participants to perceive those with clinical anxiety disorders as being socially abnormal in some way. This builds on previous research which has found that social and friendship concerns are a major component of stigma in younger people; for example, O’Driscoll et al. (2015) found that social exclusion of peers with depression related to perceived violations of the expectation of friendship, as well as perceived social and personal risks to members of the peer group (e.g. embarrassment, and perceptions of depression contagion). It may be the case that adolescents with anxiety, in being viewed a socially abnormal, may be seen as less desirable friends, both due to their perceived inability to function in a friendship (e.g. “not wanting to see her friends”) and lack of willingness among adolescents to be associated with an out-group member (e.g. “freak” “weirdo”).

In addition, the “teacher’s pet” perception mentioned above also has social implications; research into the “nerd” stereotype in adolescents has indicated that those assigned this label are perceived as being uninterested in fun, and as having inadequate social skills (Zhang, 2010). As previous studies have shown that adolescents who have a reputation for unsuccessful social interactions are more likely to be excluded by peers (Sunwolf and Leets, 2004), the perception of those with anxiety disorders as being bad company has negative implications for social inclusion. As

peer relationships are of vital importance for adolescents, the implications of these negative social perceptions of the clinically anxious for peer relationships and support are concerning.

#### “Blame and dismissiveness”

A second major theme underlying the data was that of “Blame and dismissiveness”, in which respondents expressed perceptions which implied that the symptoms described in the vignettes were either the fault of the person exhibiting the symptoms, or which minimised the distress and severity of the symptoms. For example, a common perception given by participants was that of the vignette character being “dramatic” or “a person who over-exaggerates” in order to get attention; “they may call her a drama queen, attention seeker, etc.”. By stating that the person will be seen as inflating his or her symptoms, participants imply that people in general may minimise or dismiss anxiety symptoms.

Similarly, many participants indicated that vignette characters would be seen as being personally responsible for their symptoms and experiences, with a large number of responses indicating the character would be perceived as a “worrier” who is “overthinking”. One response to the panic disorder vignette character noted she would be seen as “someone who gets anxious about small things”, while the social anxiety disorder vignette character “cares too much about other people’s opinions”. Implicit in these perceptions is the idea that the symptoms and distress experienced by the characters are their own fault and could be easily rectified if they simply brushed off their worries in the same way as non-clinically anxious people.

This implicit blame towards the vignette character is also reflected in perceptions of personal weakness. For example, in relation to the GAD vignette, one participant noted the character would be seen as “a coward for not pushing through it”. Similarly, in responding to the panic disorder and social anxiety disorder vignettes, participants indicated that the characters may be seen as “weak”, “cowardly”, “lazy” and “sensitive”.

Notably, this second major theme runs through the responses to both the clinical and non-clinical vignettes; essentially bringing the severity and seriousness of clinical anxiety disorders down to the same level of everyday, “normal” stress.

#### “Clinical vs non-clinical conceptualisations”

The third and final theme relates to responses that perceive the vignette characters in terms of the symptoms they are experiencing; whether this be in clinical or non-clinical terms. A number of participants referred to the vignette characters in explicitly clinical terms; for example, one participant noted in response to the GAD vignette that the character “possibly has a small case of anxiety” while another said that most people would say “she has anxiety. That she has mental health issues”. These types of responses were only given for the vignettes describing clinical anxiety disorders (i.e. nobody perceived the stress character as mentally ill) but were rare across the data set.

In contrast, a frequent subtheme which ran throughout the responses was that of “naming feelings” in which participants noted that characters may be viewed or classified in relation to everyday, common words or phrases which describe their feelings; “anxious”, “worried”, “upset”, “nervous”, etc. The use of these common words may indicate that the symptoms of the vignette characters is being perceived as a transient state rather than an ongoing, enduring mental illness, perhaps further contributing to the dismissal of distress outlined in the second main theme.

Specifically, a frequent perception given by respondents across all vignettes was “stress”, particularly for the GAD vignette, even more so than the actual stress vignette. This is interesting, as previous research has suggested that anxiety disorders, particularly GAD, may be normalised in society by framing symptoms as “stress”, which is essentially accepted as a fact of life in modern society (Thompson et al., 2008). Previous research has demonstrated a long delay (eight years on average) between symptom onset and help-seeking for GAD, which was largely due to lack of recognition that symptoms were indicative of a mental illness (Thompson et al., 2008).

The tendency of participants in this study to conceptualise people with clinical anxiety disorders as being stressed, or to offer words which imply minor or temporary distress (e.g. “upset”) indicate that understanding of the significance and ongoing nature of these disorders among adolescents may be lacking. It may be the case that such perceptions may feed into the implicit blame and perceptions of personal responsibility seen in the second theme. If people with clinical anxiety symptoms are incorrectly perceived as simply going through a common stressful event, then they may be blamed for not “getting on with it” like everyone else.

When considered together, the three major themes illustrate a worrying initial picture of how people view those with clinical anxiety disorders. Essentially, at the same time as marking the clinically anxious as socially abnormal, participants in general minimised their distress and blamed them for their symptoms. The implications of these findings are discussed below.

### Conclusion and implications

For over a decade now researchers in the field of mental illness stigma have argued the importance of examining individuals' responses to specific conditions separately, as stigma can vary according to the type of condition examined, both in terms of intensity and the dimension of stigma assessed (Stier and Hinshaw, 2007; Weiss et al., 2006). This appears true with regard to anxiety disorders where evidence presented here suggests that "established" mental illness stereotypes relating to fear of violence or unpredictability are not relevant to adolescents displaying symptoms of clinical anxiety disorders. Instead, the findings support the idea that the content and focus of stigmatising responses may be unique to both the type of mental illness and stage of development.

The results indicated that perceptions of personal responsibility, weakness and feelings of blame towards those with anxiety disorders were common, consistent with previous research that has shown the "weak not sick" belief to be higher in social anxiety than in disorders such as schizophrenia (Reavley and Jorm, 2014). As blame and perceptions of weakness have been associated with higher levels of discrimination, these beliefs represent a unique target for stigma reduction interventions, particularly with anxiety disorders (Yap et al., 2011).

In addition, the findings highlight the particular prominence of the potential social implications of anxiety symptoms among adolescents' perceptions, which can be understood in terms of the importance of peer relationships to this age group. In addition to perceiving peers with clinical anxiety disorders as being different to other teenagers, which sets them aside from "normal" people, participants also conceptualised them as "bad" friends who fail to carry out the requirements of friendship, such as taking part in social activities. This indicates a level of concern about the potential risks or downsides to being friends with a person with an anxiety disorder. These social concerns are not common among the adult stigma literature and may be unique to children and adolescents (O'Driscoll et al., 2015). These findings are in line with previous research which has found that children and adolescents with social anxiety are liked less and rated as having lower social skills by peers (Verduin and Kendall, 2008; Miers et al., 2010). As peers are often the preferred source of support for young people with mental illness, these negative social perceptions and their potential for increasing exclusion have implications for the ability of those with anxiety disorders to seek and obtain help (Gulliver et al., 2010).

Due to its exploratory nature, this study is limited by its use of a brief open-ended pen-and-paper question to tap into adolescents' perceptions of anxiety stereotypes, which may not have captured the intricacies and nuance of this issue in minute detail. In addition, the generalisability of the findings is limited due to the small sample size and the gender imbalance of the sample.

As such, future research should examine the stereotypes and stigmatising beliefs that have emerged in this study in greater depth, and across age groups and mental illnesses, and with a large sample that is representative of adolescents in Ireland. In particular, future research should also attempt to obtain a more representative gender balance, as male adolescents have previously been found to have higher levels of stigma towards mental illness in general, and therefore, it is important to assess whether this pattern also holds for anxiety stigma (Jorm and Wright, 2008).

In conclusion, the present study suggests that adolescents may be dismissive of peers with anxiety disorders, viewing clinical anxiety less as an illness necessitating professional help, and more of a personal weakness to be overcome. This is in direct contrast to the reality of anxiety disorders as potentially severe illnesses causing significant disability worldwide. Thus, potential interventions aiming to reduce anxiety stigma may need to alter their focus from the dangerousness stereotypes in order to emphasise the seriousness of anxiety disorders. Future interventions should also pay attention to the negative social perceptions of young people with anxiety disorders, in order to improve adolescents' responses to young people displaying symptoms.

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## Article

# Adolescent Endorsement of the “Weak-Not-Sick” Stereotype for Generalised Anxiety Disorder: Associations with Prejudice, Discrimination, and Help-Giving Intentions toward Peers

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**Abstract:** Stigma, comprising negative stereotypes, prejudice (negative affective reactions) and discrimination towards a member of a particular group, is of increasing interest in the context of mental illness. However, studies examining clinical anxiety stigma are lacking, particularly with regard to generalised anxiety disorder (GAD). There is also a lack of research into adolescent anxiety stigma, despite adolescence being a key period for early intervention for anxiety disorders, and research showing that stigma has been implicated in low rates of help-seeking and problematic peer relationships among adolescents with mental illness. Stigma has also been negatively associated with help-giving responses toward those with mental illness. Initial studies suggest that the ‘weak-not-sick’ (WNS) stereotype may be central to anxiety stigma. The present study aims to examine the endorsement of the WNS stereotype in the context of GAD, and its relationship to prejudice, discrimination, and help-giving responses among adolescents. A vignette-based survey measure was completed by 242 adolescents (74 male, 165 female, and three participants who recorded their gender as “other”) in Ireland aged between 15 and 19 years. The results of the study found that endorsement of the WNS stereotype was significantly associated with higher prejudice and discrimination, as well as lower levels of help-giving intentions. A multiple mediator model is presented showing both a direct relationship between endorsement of WNS and help-giving, and an indirect relationship between WNS and help-giving mediated by the prejudicial components of anger, fear and pity, and discrimination as assessed by desired social distance. This study adds to the limited knowledge base on stigma towards GAD in

adolescents and provides a model for how anxiety stigma may relate to help-giving. This has implications for interventions to reduce stigmatising and increase help-giving responses.

**Keywords:** stigma; mental illness; clinical anxiety disorders; generalised anxiety disorder; help-giving; adolescence

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## 1. Introduction

### 1.1. Background

Clinical anxiety disorders are among the most prevalent mental disorders, affecting over 200 million people worldwide [1,2]. Those affected experience significant and wide-ranging functional impairment, as well as reduced overall quality of life [3–5]. As such, these disorders deliver a major addition to the global disease burden [2,4]. Despite this, anxiety disorders are consistently under-recognised and underdiagnosed, with a correspondingly low treatment rate across conditions [6,7]. Overall, studies suggest that less than a third of those with anxiety disorders reported seeking treatment [8,9], with a long

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duration, often years, from first onset of symptoms to initial help-seeking being common [7,10]. This is especially true of generalised anxiety disorder (GAD) [11].

GAD is one of the most common anxiety disorders, with a lifetime prevalence of around 5% [12]. Marked by excessive and difficult to control worry and anxiety across multiple life domains, as well as symptoms such as muscle tension, trouble concentrating and fatigue, GAD is particularly likely to take a chronic course, with pervasive negative impacts on both the individual and society [1,13]. For these reasons, along with the long delay between symptom onset and help-seeking, it is of particular interest for early intervention.

Many psychological disorders first emerge during adolescence, with the increasing risk in this age group attributed to many factors, from neurobiological and hormonal changes to the unique psychosocial stressors experienced at this transitional stage of life; including a desire for increased autonomy, peer pressure, and an increase in risk-taking behaviour [14,15].

Adolescence has been found to be a key period for the emergence of anxiety disorders, including GAD [16]. Additionally, the presence of clinical and sub-clinical anxiety symptoms in adolescence is predictive of the presence of those same disorders in adulthood, as well as a number of negative outcomes, from poor overall adjustment, educational underachievement, higher levels of chronic stress and increased rates of substance abuse [17–20]. However, international research has shown that less than one in five adolescents with an anxiety disorder seek professional help [21]. Adolescence, therefore, represents an important opportunity for early intervention in clinical anxiety disorders.

### 1.2. Weak-Not-Sick: Mental Illness Stigma and Anxiety Disorders

Previous research has found that one major factor implicated in negative outcomes for those with mental illnesses is stigma. In their tripartite model of stigma, Corrigan and Watson [22] define stigma as being composed of stereotypes, prejudice (negative affective reactions) and

discrimination towards a member of a particular group. These components are related: people who endorse negative stereotypes toward a particular person or group then experience a negative emotional reaction towards them, such as fear, which, in turn, leads to behavioural discrimination [22]. The tripartite model of stigma is regularly utilised in the context of adolescent mental health research and has been validated in adolescent populations [23].

Mental illness stigma has been reported specifically as being a key barrier to seeking help for mental illness in general, and anxiety specifically, in young people [24–26] and may also influence the help-giving responses of young people towards peers who require support with a mental health issue [27], suggesting that stigma not only affects whether a person seeks help, but also impacts the response they receive when they do so. Indeed, previous studies have shown that children and adolescents with mental illnesses experience problems in peer relationships and higher levels of victimisation by peers than other conditions [28].

Mental illness stigma then, is particularly concerning in adolescence both because of the key role that peer acceptance plays in the wellbeing of adolescents in general, and more specifically because peers are often the first port of call for young people experiencing mental health problems,

with research consistently showing that adolescents prefer to seek informal help from friends [29–32]. Comprehensively understanding the nature, expression and maintenance of adolescent stigmatising responses is vital in order to inform the development of effective stigma intervention strategies with a view to improving both treatment-seeking for those with mental illnesses and help-giving responses towards them.

To date, generalised anxiety disorder, and anxiety disorders more broadly, have been relatively neglected in the stigma literature. Findings from studies into stigma towards schizophrenia and depression have emphasised the prevalence of violent, unpredictable and dangerous stereotypes, negative emotional reactions such as fear, and a desire for social distance from people with these conditions [33–35]. However, it appears that the violent or unpredictable stereotypes may be less applicable to anxiety disorders [36,37]. Instead, the handful of studies which examine anxiety disorder stigma have found that the “weak-not-sick” stereotype (WNS)—that is, a belief that the person’s symptoms do not reflect a real medical condition and instead reflect personal weakness—may be particularly salient for anxiety disorders, as outlined in a recent review [38]. These findings have also been supported by limited studies in adolescent samples [39,40]. This is important, as the WNS stereotype and perceptions of blame in particular have been associated with increased discrimination, negative attitudes, and a decreased likelihood of seeking appropriate help for mental illness [41–44].

The majority of the few studies exploring anxiety stigma have either focused on social anxiety disorder or post-traumatic stress disorder (PTSD), or did not provide a breakdown of results by disorder [38,45,46], meaning there is a significant gap in the literature examining generalised anxiety disorder specifically. The extremely limited literature on GAD stigma suggests that stigmatising attitudes toward GAD are common among adolescents [47] but detailed research into the content of that stigma is scarce. Studies examining the delay in treatment-seeking for GAD have found that a major reason given is that people with the

disorder tend to dismiss symptoms, or normalise them as everyday stress [11]. If people experiencing symptoms of GAD are minimising or failing to recognise the severity of their own condition, this suggests that the WNS stereotype may also be relevant to GAD. To date, no studies have examined the content of GAD stigma in detail in adolescents, particularly with regard to the role of the WNS stereotype. There is also a distinct lack of research into the relationship between the WNS stereotype and help-giving responses toward peers with anxiety disorders, which is concerning, given the key role that peer support plays for young people experiencing mental health difficulties [29–32].

### 1.3. The Present Study

The present study aims to address these gaps in the literature, by examining stigma toward GAD in a sample of adolescents, as well as the relationship between GAD stigma and adolescents' help-giving intentions. It is hoped that this paper will provide increased understanding of the associations between the various dimensions of stigma and young people's help-giving intentions, which has implications for stigma reduction efforts and future programmes aimed at improving mental health first aid responses. Additionally, it will add to the extremely narrow knowledge base on how adolescents perceive peers with anxiety disorders, GAD in particular. Finally, as previous research has shown that the WNS stereotype may be central to anxiety stigma, the paper will examine this stereotype in particular in the context of GAD, a perspective which is lacking in the literature thus far. Stigmatising responses in general have been found to be consistently higher in males than females with regard to GAD as well as other mental illnesses [48,49] and so the present study will also examine the endorsement of the WNS stereotype across the genders.

As such, the following research questions are proposed:

Do adolescents endorse the WNS stereotype for hypothetical peers presented with symptoms of GAD? Does endorsement of the WNS stereotype differ according to gender?

Does greater endorsement of the WNS stereotype for adolescent peers with GAD relate to greater prejudice and discrimination and less help-giving intentions?

It is expected based on limited prior research in primarily adult samples [38,39] that a proportion of adolescents will endorse the WNS stereotype toward a hypothetical peer with GAD. It is also expected that the WNS stereotype will be endorsed at higher rates by male participants, in line with previous research which has found males to show higher rates of stigmatising responses than females overall [48,49].

Previous findings, which have shown that negative stereotypes in general are associated with increased prejudice and discrimination [22,23] as well as findings showing that perceptions of personal weakness and blame are associated with increased discrimination [41,43], suggest that endorsement of the WNS stereotype will be associated with greater prejudice and discrimination toward peers with GAD. The question of the relationship between endorsement of the WNS stereotype and help-giving responses is largely an exploratory one, due to the lack of existing research in this area.

However, research has shown that higher levels mental illness stigma generally may be negatively associated with help-giving responses [27], tentatively suggesting that if the WNS is

endorsed, and is associated with increased prejudice and discrimination, then this may be negatively associated with help-giving responses.

## 2. Methods

### 2.1. Participants

Researchers recruited participants from secondary schools and youth groups across the province of Leinster, Ireland, by contacting the organisations via phone and email, resulting in a sample of 242 adolescents recruited from five secondary schools and one youth group across the province of Leinster, Ireland. Participants ranged in age from 15 to 19 years (mean = 16.5 years, SD = 0.8); 74 participants (30.6%) recorded their gender as male, 165 (68.2%) as female, and three participants recorded their gender as “other”. Participants received no compensation for their participation.

### 2.2. Materials

This study was part of a larger study investigating mental health literacy, stigma and help-giving responses toward a variety of clinical anxiety disorders. For the purposes of this paper, analysis was limited to variables examining stigmatising responses and likelihood to help for generalised anxiety disorder (GAD).

The survey measure consisted of brief demographic questionnaire, followed by a brief vignette depicting a young person showing symptoms of GAD. The vignette was developed in accordance with the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) criteria for GAD [1], validated by six trainee clinical psychologists. Participants were randomly assigned either a male (Sean) or female (Katie) vignette character, in order to control for potential effects of vignette gender on responses. The vignette reads as follows:

*“Katie is in 5th year. She loves reading, and often swaps books with her best friends from school. However, over the course of the last year, Katie has found it difficult to relax, and feels like she cannot sit still. She can’t stop thinking about the future and whether she will do well in her exams and get into her first-choice course in college, even though her exams are over a year away. When she sits down to study in the evenings she finds it difficult to concentrate on the work, and her teachers have noticed that she often seems distracted during class. Her friends and family have started to notice how tense she is, often about little things. When her mother is late home from work one day, Katie finds herself imagining the worst, that her mother has been in a car accident. She knows that the traffic is heavy and tries to relax, but she can’t stop worrying until her mother gets home safely. Her parents have also noticed that she has been very short-tempered lately, getting angry and slamming doors around the house. She doesn’t even enjoy reading anymore, because she finds her mind drifting toward her worries instead of the words on the page.”*

This was then followed by the stigma and help-giving intention items described below:

**Stereotypes:** The measure of the WNS stereotype consisted of three items adapted from Griffiths et al.’s Personal Depression Stigma Scale [50]. Participants rated statements such as “People with a problem like Katie’s could snap out of it, if they wanted” on a five-point scale from “strongly disagree” to “strongly agree”, such that higher scores indicated greater

endorsement of the stereotype. Responses to the three WNS items were summed and averaged to produce a mean WNS stereotype score. Internal consistency for the WNS items was acceptable, with a Cronbach's alpha of 0.7.

**Prejudice:** The prejudice measure consisted of a nine-item emotional-ratings scale used and validated by Angermeyer and Matschinger [51] which included three subscales measuring anger, fear, and pity. Each subscale consisted of 3 items. Participants rated their agreement on a five-point scale from strongly disagree to strongly agree to statements such as "Katie's behaviour makes me feel afraid".

Higher scores on each subscale indicate more anger, more fear, and more pity. Internal consistency values were 0.7 for the anger subscale, 0.75 for the fear subscale, and 0.4 for the pity subscale.

**Discrimination:** The discrimination measure used was Kelly and Jorm's [52] social distance scale. This consists of six items relating to participants' willingness to engage in contact with a hypothetical peer (e.g., going to the peer's house after school), on a four-point scale ('definitely unwilling' to 'definitely willing'). These items were then reverse scored and summed so that higher scores indicate a higher desire for social distance. Reliability for this scale has previously been reported as 0.9 [52].

Internal consistency for the present study was 0.85.

**Help-giving intentions:** Participants were also asked to rate the likelihood that they would offer to help the peer with their problem, on a five-point scale from 'very unlikely' to 'very likely'. This item

was adapted from measures of help-giving intentions used in previous research, such as Cavallo, Zee and Higgins [53].

### 2.3. Procedure

Ethical approval was obtained from the Trinity College Dublin School of Psychology Research Ethics Committee (approval code SPREC042018-1). Permission to conduct the study was then obtained from each school and the youth group. Informed consent from a parent or guardian was obtained via an information and consent form sent home with students prior to the commencement of the study. On the day of data collection, those students with signed parental consent forms who wished to participate were given their own information and consent form to sign. Participants were then presented with a pen-and-paper survey.

### 2.4. Data Processing

Descriptive statistics, including percentages, means (*M*), and standard deviations (*SD*) were used to assess if adolescents endorse the WNS stereotype for hypothetical peers presented with symptoms of GAD. Pearson's *r* correlations were conducted to determine the relationship between the WNS items and, when these items were combined to form a WNS subscale, mean score differences for males and females were compared using independent *t*-tests. These calculations were done using SPSS version 25 (IBM, Armonk, NY, USA). The PROCESS (Version 3) macro [54] for SPSS generated a multiple mediator model to explain how



adolescents' endorsement of the WNS stereotype was related to aspects of prejudice, discrimination and help-giving responses.

### 3. Analysis and Results

#### 3.1. Do Adolescents Endorse the 'Weak-Not-Sick' (WNS) Stereotype for Hypothetical Peers Presented with Symptoms of GAD?

The majority of participants, almost two thirds, indicated 'disagree' or 'strongly disagree' with reference to the three statements that tapped into the WNS stereotype. Approximately one fifth of the sample neither agreed nor disagreed with the statements, leaving between 11.5% and 17% of adolescents who endorsed the stereotype. Exact values are detailed in Table 1.

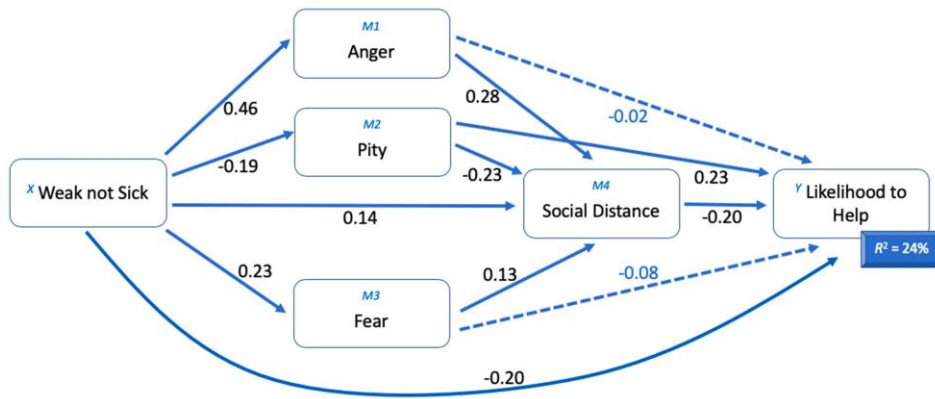
**Table 1.** Adolescents' endorsement of items comprising the 'weak-not-sick' stereotype.

Stereotype Statement	<i>M</i> ( <i>SD</i> )	Achieved Range	Disagree or Strongly Disagree	Neither Agree nor Disagree	Agree or Strongly Agree
"... could snap out of it if they wanted"	2.26 (1.16)	1–5	64.8%	18.2%	17%
"... a sign of personal weakness"	2.12 (1.12)	1–5	65.8%	19.6%	14.6%
"... not a real medical illness"	2.12 (1.11)	1–5	65.5%	23%	11.5%

Pearson's *r* correlations showed that scores for each item moderately correlated with each other, with a range of 0.40 to 0.42 ( $p < 0.01$ ). When scores for the three items were added and averaged to create the WNS stereotype subscale (Cronbach's  $\alpha = 0.67$ ), the mean value was 2.15 ( $SD = 0.88$ ), within a range from one to five, where lower scores reflect less endorsement of the stereotype. Independent *t*-tests to investigate differences in the mean score for males and females on this subscale indicated that adolescent boys ( $M = 2.33$ ,  $SD = 0.91$ ) were significantly more likely than adolescent girls ( $M = 2.07$ ,  $SD = 0.86$ ) to endorse the view that the vignette character with GAD was WNS ( $t(229) = 2.08$ ,  $p < 0.05$ , effect size Cohen's  $d = 0.3$ ).

#### 3.2. Does Greater Endorsement of the 'Weak-Not-Sick' Stereotype for Adolescent Peers with GAD Relate to Greater Prejudice and Discrimination and Less Help-Giving Intentions?

A multiple mediator model was developed to explore how endorsing the WNS stereotype for a hypothetical peer with symptoms indicative of Generalised Anxiety Disorder had a direct negative relationship with the likelihood to offer help and an indirect association through the mediating prejudice variables of anger, pity and fear and a measure of desired social distance. Table 2 displays descriptive information and the bivariate relationships among key variables and Figure 1 displays the proposed model.



**Figure 1.** Anger, pity, fear and social distance as mediators in the relationship between the ‘weak-not-sick’ stereotype and help-giving intentions. Standardized path coefficients are presented. Total effect:  $b = -0.3425$ ,  $SE = 0.0641$ ,  $p < 0.0000$ . Direct effect:  $b = -0.2036$ ,  $SE = 0.0694$ ,  $p < 0.05$ . Indirect effect:  $XM_1Y = -0.0082$ ,  $BootSE = 0.0380$ , 95% Confidence Interval (CI) =  $-0.0893$  to  $0.0625$ ;  $XM_2Y = 0.0428$ ,  $BootSE = 0.0229$ , 95% CI =  $-0.0963$  to  $0.0075$ ;  $XM_3Y = -0.0194$ ,  $BootSE = 0.0148$ , 95% CI =  $-0.0527$  to  $0.0062$ ;  $XM_4Y = -0.0279$ ,  $BootSE = 0.0178$ , 95% CI =  $-0.0685$  to  $0.0005$ ;  $XM_1M_4Y = -0.0257$ ,  $BootSE = 0.0126$ , 95% CI =  $-0.0550$  to  $-0.0058$ ;  $XM_2M_4Y = 0.0087$ ,  $BootSE = 0.0057$ , 95% CI =  $0.0225$  to  $0.0010$ ;  $XM_3M_4Y = -0.0062$ ,  $BootSE = 0.0041$ , 95% CI =  $-0.0162$  to  $-0.0003$ ,  $N = 221$ .

Overall, the model accounted for 23.53% of the variance in adolescents’ likelihood to help ( $R^2 = 0.2353$ ,  $F(5, 215) = 13.23$ ,  $p < 0.0000$ ). The direct effect of the WNS stereotype on helping intentions was significant ( $b = -0.2036$ ,  $SE = 0.0694$ ,  $p < 0.05$ ), so that greater endorsement of the stereotype was associated with less likelihood to help. The WNS stereotype was also significantly associated with less pity ( $b = -0.1882$ ) and greater anger ( $b = 0.4584$ ), fear ( $b = 0.2343$ ) and a desire for social distance ( $b = 0.1407$ ). Pity was significantly associated with less social distance ( $b = -0.2322$ ) and greater intention to help ( $b = 0.2273$ ), while anger ( $b = 0.2830$ ) and fear ( $b = 0.1326$ ) were both significantly associated with greater social distance, but were not significantly associated with intention to help. Social distance was significantly associated with less intention to help. As such, significant indirect effects were also noted in the relationship between WNS and intention to help. Pity ( $b = 0.0428$ ,  $SE = 0.0229$ , 95%CI:  $0.0963$  to  $0.0075$ ) and social distance ( $b = -0.0279$ ,  $SE = 0.0178$ , 95%CI:  $-0.0685$  to  $-0.0005$ ) independently partially mediated the relationship between the WNS stereotype and likelihood to help. Further partial mediation was provided through anger combined with social distance ( $b = -0.0255$ ,  $SE = 0.0124$ , 95% CI:  $-0.0550$  to  $-0.0059$ ), pity with social distance ( $b = 0.0086$ ,  $SE = 0.0055$ , 95% CI:  $0.0216$  to  $0.0010$ ), and fear with social distance ( $b = -0.0061$ ,  $SE = 0.0041$ , 95% CI:  $-0.0160$  to  $-0.0003$ ).

Other indirect effects were not significant. Table 3 contains the model coefficients.

**Table 2.** Descriptive details for, and correlations between, key variables.

Variable	M (SD)	Achieved Range	Weak Not Sick	Anger	Pity	Fear	Social Distance	Likelihood to Help
Weak not Sick	2.15 (0.88)	1–5	1	0.441 **	-0.181 *	0.215 **	0.347 **	-0.332 **

Anger	4.65 (1.95)	3–13	1	-0.268 *	0.366 **	0.429 **	-0.284 **
Pity	11.90 (1.91)	3–15	1	-0.054	-0.337 **	0.330 **	
Fear	5.82 (2.32)	3–12	1		0.250 **	-0.203 *	
Social distance	11.03 (3.86)	6–24	1			-0.345 **	
Likelihood to help	4.39 (0.891)	1–5	1				

\*  $p$  is significant at the 0.05 level (one-tailed) \*\*  $p$  is significant at the 0.01 level (one-tailed).

**Table 3.** Model coefficients for the effect of weak not sick on likelihood to help with anger, pity, fear and social distance as mediators.

Variable	Anger			Pity			Fear			Social Distance			Likelihood to Help		
	Coeff.	SE	$p$	Coeff.	SE	$p$	Coeff.	SE	$p$	Coeff.	SE	$p$	Coeff.	SE	$p$
Weak not sick	0.4584	0.0583	0.0000	-0.1882	0.0655	0.0045	0.2345	0.0642	0.0003	0.1407	0.0643	0.0298	-0.2036	0.0694	0.0037
Anger										0.2830	0.0693	0.0001	-0.0180	0.0767	0.8150
Pity										-0.2322	0.0590	0.0001	0.2273	0.0652	0.0006
Fear										0.1326	0.0621	0.0338	-0.0827	0.0669	0.2177
Social distance													-0.1983	0.0726	0.0068

$R^2 = 0.2200$   $F(12,19) = 61.78$   $p = 0.0000$    
 $R^2 = 0.0363$   $F(12,19) = 8.258$   $p = 0.0045$    
 $R^2 = 0.0573$   $F(12,19) = 13.32$   $p = 0.0003$    
 $R^2 = 0.2911$   $F(42,19) = 22.18$   $p = 0.0000$    
 $R^2 = 0.2353$   $F(52,19) = 13.23$   $p = 0.0000$

#### 4. Discussion

The results of the present study found that endorsement of the WNS stereotype was present among a substantial proportion of the sample. While it is positive that approximately two thirds of participants disagreed with the WNS stereotype, 11–17% explicitly endorsed the WNS stereotype across each of the three items that comprise it. Additionally, the one fifth of participants who chose the neutral “neither agree nor disagree” option across the three items cannot be said to reject the WNS stereotype.

This is a broadly similar proportion to that found in some previous studies involving social phobia, in which 15–22% of participants aged 15–25 endorsed the various WNS items [55], although lower than that found in others that examined social phobia stigma [39]. Further studies are needed in the context of GAD to establish whether the proportion of students found to endorse the WNS stereotype in the present study is generalisable to the adolescent population at large. If it is, this represents a major target for stigma reduction efforts.

The study also found that male adolescents were significantly more likely to endorse the WNS stereotype than females. This is in line with previous research from the broader stigma literature [48,49] and suggests that adolescent males may be one group of interest when developing future educational interventions.

The present study also demonstrated that greater endorsement of the WNS stereotype was associated with significantly higher prejudice (higher fear, higher anger, and less pity), significantly higher levels of desired social distance, and significantly lower likelihood of

helping the person with GAD. These findings are significant, as they shed light on the potential pathways between stigma and help-giving, specifically with regard to the WNS stereotype, which has not been studied in detail in anxiety disorders, or in the context of adolescence to date. The results show both a direct relationship between WNS and help-giving, and an indirect relationship between WNS and help-giving mediated by prejudice (anger, fear and pity) and desired social distance.

The direct association between WNS and help-giving may relate to perceptions of the need for help; if a person believes that symptoms of GAD are indicative of a personal weakness rather than a serious mental illness, they may then not perceive the problem as being one that necessitates help or intervention in general. This has been implied in research into help-seeking for anxiety disorders in which minimisation and misperception of symptoms as being normal, everyday stress is associated with low rates of help-seeking by people with anxiety disorders [11] but has yet to be investigated with regard to help-giving responses. Future research should attempt to parse this relationship further.

The indirect pathway between the WNS stereotype and help-giving shown in Figure 1 (above) endorses the tripartite model of stigma proposed by Corrigan and Watson [22], in that the relationship between stereotypes (WNS), prejudice and discrimination are in the expected direction, with greater endorsement of negative stereotypes leading to higher levels of prejudice and greater discrimination. Specifically, endorsement of the WNS stereotype was associated with higher prejudice (greater levels of anger and fear, and less pity), which in turn was associated with higher levels of discrimination in the form of desire for social distance. This is in line with previous research and discussion of the relationship between stigma components in general [22,56].

In essence, the results show that if participants perceive symptoms of GAD as being the vignette character's own fault, they are less likely to feel sorry for them, are more likely to feel negative emotions such as anger and fear, and are less likely to want to spend time with them. These factors (higher prejudice and discrimination) in turn are associated with less reported likelihood that participants would help the person experiencing GAD. These findings are among the first to examine the relationship between endorsement of the WNS stereotype and help-giving, in the context of adolescent GAD, and the first, to our knowledge, to examine the mediating factors underlying that relationship.

While research into these underlying processes are severely lacking in the mental illness stigma literature, these results are supported by findings from the broader psychological literature on the role of attributions and help-giving responses, which have found that when people are perceived to be in control of their own negative actions or experiences, this is associated with increased anger, less pity, and a lower likelihood of helping responses [57]. A greater focus on these underlying pathways in the context of stigma in general, and anxiety stigma in particular, is needed in future research, both to validate existing models of stigma, and to shed light on new targets for stigma reduction efforts.

The study also found that the WNS stereotype was directly associated with increased desire for social distance, which replicates findings from previous studies, as outlined in a review by Kaushik et al. [44]. Why participants' perceptions of personal weakness are associated with

higher desired social distance independently of (as well as mediated by) the prejudice items measured is unclear, although it is possible that perceptions of personal weakness may lead to some other affective reaction that is not captured by the standard prejudice measure used in this study, which may mediate the relationship in a similar way to that of anger, pity and fear. Additionally, pity was found to be associated with increased likelihood of offering help independently of social distance, unlike anger and fear. This finding is supported by previous research which has shown that sympathy is a consistent predictor of help-giving intentions [57,58].

### *Implications, Limitations and Directions for Future Research*

The results of this study indicate that a proportion of adolescents endorse the WNS stereotype toward GAD, and that endorsement of this stereotype is associated with prejudice, discrimination, and help-giving intentions. These findings have implications both in terms of providing a clear target for stigma reduction efforts, and for potential interventions aimed at increasing help-giving intentions among adolescents toward their peers with GAD and other anxiety disorders. By educating adolescents as to the serious nature of GAD, in terms of its severity and impact on those affected [12,13], as well as aiming to increase empathy and sympathy for those with the condition, it is possible that both stigmatising and help-giving responses could be targeted simultaneously. Given the emergence of anxiety disorders such as GAD in adolescence, and their potential to become chronic, lifelong conditions [5,13,16], early intervention opportunities such as these must be investigated and capitalised on. Additionally, given the relationship between stigma and treatment-seeking seen in previous research, stigma-reduction efforts also have implications for uptake of appropriate treatment for anxiety disorders, which is currently extremely low [9,24–26].

Limitations of the study include a relatively small sample size that was limited in scope to older adolescents. In addition, the low Cronbach's alpha value for the Pity subscale in the present study suggests that related findings should be interpreted with caution. Finally, there is a potential for social desirability bias when using explicit measures of stigma [59], and our measures therefore may not be capturing a portion of stigmatising responses. As such, future research should expand their focus to a wider age range of adolescents, with larger sample sizes, in order to increase the generalisability of the findings and investigate whether they hold true in different age groups. Future studies should also consider adding implicit measures of stigma in order to reduce any potential social desirability bias. Additionally, future research should examine the relationship between the WNS stereotype and help-giving, and underlying mediating factors, in other anxiety disorders, which have also been neglected in previous research.

## **5. Conclusions**

Adolescence represents an important opportunity for early intervention in clinical anxiety disorders, including GAD, which is particularly likely to have a long delay between onset of symptoms and initiating treatment. Mental illness stigma has been implicated in negative outcomes across a range of mental illnesses, including GAD, but anxiety disorders in general have been neglected in the stigma literature. Early research suggests that anxiety stigma in

particular may focus on a perception that symptoms are due to personal weakness. The present study examined the WNS stereotype in the context of GAD and found it to be endorsed by a significant minority of adolescents. The study also outlines a model for how anxiety stigma may relate to help-giving, and demonstrates the significant associations between endorsement of the WNS stereotype and prejudice, discrimination, and help-giving intentions. In addition to adding to the limited knowledge base on the nature of anxiety stigma in adolescents, the study then provides, via the WNS stereotype, a specific target for general stigma-reduction interventions with additional implications for help-giving responses toward those with GAD.

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**Appendix C – Survey Measure**

1) Age: \_\_\_\_\_

2) Gender: \_\_\_\_\_

3) What is the highest level of education which your mother/female guardian (if applicable) has completed to date? Please check the box beside your answer.

	<i>Mother or female Guardian</i>	<i>Father or male guardian</i>
Primary School or less		
Lower Secondary School (e.g. Intermediate/ Junior Certificate or equivalent)		
Upper Secondary School (e.g. Leaving Certificate or equivalent)		
Third Level Certificate or Diploma		
Primary Degree		
Postgraduate/ Higher Degree		

4) Please indicate your ethnic or cultural background:

1. White Irish	
2. Black Irish	
3. Irish Traveller	
4. African	
5. Chinese	
6. Any other Asian Background	
7. Any other White Background	
8. Any other Black Background	
9. Other, including mixed background (please specify)	

Please answer the following questions as honestly as possible. There are no right or wrong answers.

Please choose only one answer to each question, by circling the number or letter beside the answer you choose.

## KATIE

Katie is in 5<sup>th</sup> year. She loves reading, and often swaps books with her best friends from school. However, over the course of the last year, Katie has found it difficult to relax, and feels like she cannot sit still. She can't stop thinking about the future and whether she will do well in her exams and get into her first-choice course in college, even though her exams are over a year away. When she sits down to study in the evenings she finds it difficult to concentrate on the work, and her teachers have noticed that she often seems distracted during class. Her friends and family have started to notice how tense she is, often about little things. When her mother is late home from work one day, Katie finds herself imagining the worst, that her mother has been in a car accident. She knows that the traffic is heavy and tries to relax, but she can't stop worrying until her mother gets home safely. Her parents have also noticed that she has been very short-tempered lately, getting angry and slamming doors around the house. She doesn't even enjoy reading anymore, because she finds her mind drifting toward her worries instead of the words on the page.

- 1) What, if anything, do you think is wrong with Katie?

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- 2) How well do you think Katie is able to manage in her day to day life? (e.g. keeping up with schoolwork, taking part in hobbies etc.).  
(Circle the number below the answer that you feel best describes her)

<b>I think Katie manages extremely well in her day to day life</b>	<b>I think Katie manages somewhat well</b>	<b>I think Katie has some trouble managing</b>	<b>I think Katie has a lot of trouble managing</b>
1	2	3	4

- 3) If Katie was your friend, how worried would you be about her overall emotional wellbeing? (Circle the number below the answer that best describes how you feel)

<b>I would not be at all worried about her emotional well-being</b>	<b>I would be a little bit worried about her emotional well-being</b>	<b>I would be quite worried about her emotional well-being</b>	<b>I would be extremely worried about her emotional well-being</b>
---	---	--	--

1	2	3	4

4) How long do you think it will take for Katie to feel better again?

<b>One or two days</b>	<b>One or two weeks</b>	<b>One or two months</b>	<b>Longer than a few months</b>
1	2	3	4

5) What do you think is the underlying cause of Katie's problems? Please rate your agreement with each of the following statements.

<b>Katie feels like this because....</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neither agree or disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
<b>a)... it's just her personality</b>	1	2	3	4	5
<b>b)...of a chemical imbalance in her brain</b>	1	2	3	4	5
<b>c)...because problems like Katie's run in families</b>	1	2	3	4	5
<b>d)...of problems from her childhood</b>	1	2	3	4	5
<b>e)...something bad happened to her in the past</b>	1	2	3	4	5
<b>f)... of everyday stresses</b>	1	2	3	4	5
<b>g)... she thinks too much</b>	1	2	3	4	5
<b>h)... she has a mental illness/psychological problem</b>	1	2	3	4	5
<b>i)... she has a physical medical problem</b>	1	2	3	4	5

6) Do you think Katie needs help from another person to cope with her problems?

<b>Yes</b>	<b>No</b>	<b>Don't Know</b>
1	2	3

7) If you were friends with Katie, how likely is it that you would help her with her problem?"

<b>Very unlikely</b>	<b>Somewhat unlikely</b>	<b>Not sure</b>	<b>Somewhat likely</b>	<b>Very likely</b>
1	2	3	4	5

8) If you had a friend with a problem like Katie's, what might you do to help her? Write down some steps you would take to help. You can list up to four.

<b>1. The first step I would take is...</b>	
<b>2. Then I would...</b>	
<b>3. Then I would...</b>	
<b>4. Then I would...</b>	

9) How confident would you be in offering help with Katie's problem? Please circle the answer that best applies to you.

<b>I would not try to help, I would probably make things worse</b>	<b>Not very confident</b>	<b>Unsure</b>	<b>A Little Confident</b>	<b>Very confident I could help</b>
1	2	3	4	5

10) Please rate your agreement with each statement below by circling a number from 1 to 5:

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither agree or disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
<b>a) People with a problem like Katie's could snap out of it, if they wanted</b>	1	2	3	4	5
<b>b) A problem like Katie's is a sign of personal weakness</b>	1	2	3	4	5
<b>c) Katie's problem is not a real medical illness</b>	1	2	3	4	5
<b>d) People like Katie are unpredictable</b>	1	2	3	4	5
<b>e) People like Katie lack self-control</b>	1	2	3	4	5
<b>f) People like Katie are aggressive</b>	1	2	3	4	5
<b>g) People like Katie are frightening</b>	1	2	3	4	5
<b>h) People like Katie are dangerous</b>	1	2	3	4	5
<b>i) People like Katie are needy</b>	1	2	3	4	5
<b>j) People like Katie are dependent on others</b>	1	2	3	4	5
<b>k) People like Katie are helpless</b>	1	2	3	4	5
<b>l) People like Katie are strange</b>	1	2	3	4	5
<b>m) People like Katie are different to other students</b>	1	2	3	4	5
<b>n) People like Katie are no fun to be around</b>	1	2	3	4	5

<b>o) People like Katie aren't good company</b>	1	2	3	4	5
<b>p) People like Katie are just looking for attention</b>	1	2	3	4	5
<b>q) People like Katie are overly dramatic</b>	1	2	3	4	5

11) Please rate your agreement with each statement below by circling a number from 1 to 5:

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither agree or disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
<b>a) Katie's behaviour makes me feel angry</b>	1	2	3	4	5
<b>b) Katie's behaviour makes me feel irritated</b>	1	2	3	4	5
<b>c) I would make fun of Katie</b>	1	2	3	4	5
<b>d) Katie's behaviour makes me feel sorry for her</b>	1	2	3	4	5
<b>e) I want to help Katie with her problem</b>	1	2	3	4	5
<b>f) I understand how Katie feels</b>	1	2	3	4	5
<b>g) Katie's behaviour makes me feel uneasy</b>	1	2	3	4	5
<b>h) Katie's behaviour makes me feel afraid</b>	1	2	3	4	5
<b>i) Katie's behaviour makes me feel insecure</b>	1	2	3	4	5

12) Please indicate your agreement with the following statements by circling a number from 1-4, where 1 = "definitely unwilling" to engage in the activity described and 4 = "definitely willing" to engage in the activity described.

	<b>Definitely Unwilling</b>			<b>Definitely Willing</b>
<b>a) To go to Katie's house after school</b>	1	2	3	4



<b>b) To invite Katie to your house after school</b>	1	2	3	4
<b>c) Work on a school project with Katie</b>	1	2	3	4
<b>d) Spend time with Katie at the weekend</b>	1	2	3	4
<b>e) Have Katie date your best friend</b>	1	2	3	4
<b>f) Have it become general knowledge that you and Katie are good friends</b>	1	2	3	4

## CAOIMHE

Caoimhe is in 6<sup>th</sup> year. She is hoping to study Business in college, and does very well in most of her subjects in school. She gets on well with her friends and family, although she often argues with her younger sister, who likes to borrow her things without asking. She usually goes to the cinema every Friday with her friend Jack, who lives a few houses away from her. One Friday, however, Caoimhe sends Jack a short text telling him she can't make it. When Jack calls her to find out why, Caoimhe gets upset, and starts to cry. She explains that due to cutbacks, her mother has just lost her job in the bank, and because she is a single mother, money is going to be very tight at home. They might even have to move to a smaller house if her Mam can't get another job. Caoimhe loves where she lives, and doesn't want to move away from all of her friends. After the phone call, Caoimhe can't sleep, and stays up for hours thinking about what will happen next. She's sad for her mother, and is also afraid that now she won't be able to afford to move away to college like she's been planning to for years. She might have to get a part-time job at the weekend, which will take up a lot of study-time.

- 1) What, if anything, do you think is wrong with Caoimhe?

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- 2) How well do you think Caoimhe is able to manage in her day to day life? (e.g. keeping up with schoolwork, taking part in hobbies etc.).

(Circle the number below the answer that you feel best describes her)

<b>I think Caoimhe manages extremely well in her day to day life</b>	<b>I think Caoimhe manages somewhat well</b>	<b>I think Caoimhe has some trouble managing</b>	<b>I think Caoimhe has a lot of trouble managing</b>
1	2	3	4

- 3) If Caoimhe was your friend, how worried would you be about her overall emotional wellbeing? (Circle the number below the answer that best describes how you feel)

<b>I would not be at all worried about her emotional well-being</b>	<b>I would be a little bit worried about her emotional well-being</b>	<b>I would be quite worried about her emotional well-being</b>	<b>I would be extremely worried about her emotional well-being</b>
---	---	--	--

1	2	3	4

4) How long do you think it will take for Caoimhe to feel better again?

<b>One or two days</b>	<b>One or two weeks</b>	<b>One or two months</b>	<b>Longer than a few months</b>
1	2	3	4

5) What do you think is the underlying cause of Caoimhe's problems? Please rate your agreement with each of the following statements.

<b>Caoimhe feels like this because....</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neither agree or disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
a)... it's just her personality	1	2	3	4	5
b)...of a chemical imbalance in her brain	1	2	3	4	5
c)...because problems like Caoimhe's run in families	1	2	3	4	5
d)...of problems from her childhood	1	2	3	4	5
e)...something bad happened to her in the past	1	2	3	4	5
f)... of everyday stresses	1	2	3	4	5
g)... she thinks too much	1	2	3	4	5
h)... she has a mental illness/psychological problem	1	2	3	4	5
i)... she has a physical medical problem	1	2	3	4	5

6) Do you think Caoimhe needs help from another person to cope with her problems?

<b>Yes</b>	<b>No</b>	<b>Don't Know</b>
1	2	3

7) If you were friends with Caoimhe, how likely is it that you would help her with her problem”

<b>Very unlikely</b>	<b>Somewhat unlikely</b>	<b>Not sure</b>	<b>Somewhat likely</b>	<b>Very likely</b>
1	2	3	4	5

8) If you had a friend with a problem like Caoimhe’s, what might you do to help her? Write down some steps you would take to help. You can list up to four.

<b>1. The first step I would take is...</b>	
<b>2. Then I would...</b>	
<b>3. Then I would...</b>	
<b>4. Then I would...</b>	

9) How confident would you be in offering help with Caoimhe’s problem? Please circle the answer that best applies to you.

<b>I would not try to help, I would probably make things worse</b>	<b>Not very confident</b>	<b>Unsure</b>	<b>A Little Confident</b>	<b>Very confident I could help</b>
1	2	3	4	5

10) Please rate your agreement with each statement below by circling a number from 1 to 5:

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither agree or disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
a) People with a problem like Caoimhe's could snap out of it, if they wanted	1	2	3	4	5
b) A problem like Caoimhe's is a sign of personal weakness	1	2	3	4	5
c) Caoimhe's problem is not a real medical illness	1	2	3	4	5
d) People like Caoimhe are unpredictable	1	2	3	4	5
e) People like Caoimhe lack self-control	1	2	3	4	5
f) People like Caoimhe are aggressive	1	2	3	4	5
g) People like Caoimhe are frightening	1	2	3	4	5
h) People like Caoimhe are dangerous	1	2	3	4	5
i) People like Caoimhe are needy	1	2	3	4	5
j) People like Caoimhe are dependent on others	1	2	3	4	5
k) People like Caoimhe are helpless	1	2	3	4	5
l) People like Caoimhe are strange	1	2	3	4	5
m) People like Caoimhe are different to other students	1	2	3	4	5
n) People like Caoimhe are no fun to be around	1	2	3	4	5
o) People like Caoimhe aren't good company	1	2	3	4	5
p) People like Caoimhe are just looking for attention	1	2	3	4	5
q) People like Caoimhe are overly dramatic	1	2	3	4	5

11) Please rate your agreement with each statement below by circling a number from 1 to 5:

	Strongly Disagree	Disagree	Neither agree or disagree	Agree	Strongly Agree
a) Caoimhe's behaviour makes me feel angry	1	2	3	4	5
b) Caoimhe's behaviour makes me feel irritated	1	2	3	4	5
c) I would make fun of Caoimhe	1	2	3	4	5
d) Caoimhe's behaviour makes me feel sorry for her	1	2	3	4	5
e) I want to help Caoimhe with her problem	1	2	3	4	5
f) I understand how Caoimhe feels	1	2	3	4	5
g) Caoimhe's behaviour makes me feel uneasy	1	2	3	4	5
h) Caoimhe's behaviour makes me feel afraid	1	2	3	4	5
i) Caoimhe's behaviour makes me feel insecure	1	2	3	4	5

12) Please indicate your agreement with the following statements by circling a number from 1-4, where 1 = "definitely unwilling" to engage in the activity described and 4 = "definitely willing" to engage in the activity described.

	Definitely Unwilling			Definitely Willing
a) To go to Caoimhe's house after school	1	2	3	4
b) To invite Caoimhe to your house after school	1	2	3	4
c) Work on a school project with Caoimhe	1	2	3	4
d) Spend time with Caoimhe at the weekend	1	2	3	4
e) Have Caoimhe date your best friend	1	2	3	4
f) Have it become general knowledge that you and Caoimhe are good friends	1	2	3	4



## SARAH

Sarah is in 6<sup>th</sup> year. She is a member of the local GAA club and she has been seeing her boyfriend James for a year. She has always been an outgoing, friendly person. However, one evening while walking to training, Sarah feels a sudden, intense sensation of fear. Her heart begins to pound and she feels like it might burst out of her chest. She begins to feel dizzy and unsteady and is afraid she might faint. Though her hands are shaking, she manages to get her phone out of her pocket and calls her mam to bring her home. By then, Sarah is feeling okay, and when she gets home she tries to forget about it. However, two days later on the bus to school, the same thing happens. Since then, Sarah has been extremely nervous leaving the house in case it happens again, and worries that if it keeps happening, she could have a heart attack and die. She is particularly afraid that it will happen in school, in front of everyone. She has missed football training for the past few weeks, and was supposed to go to a concert in Croke Park with James and a big group of their friends, but finds herself making excuses not to go so that she doesn't have to worry. Despite this, she suffers more attacks over the next few months, and begins to fear that she might be losing her mind.

- 1) What, if anything, do you think is wrong with Sarah?

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- 2) How well do you think Sarah is able to manage in her day to day life? (e.g. keeping up with schoolwork, taking part in hobbies etc.).

(Circle the number below the answer that you feel best describes her)

<b>I think Sarah manages extremely well in her day to day life</b>	<b>I think Sarah manages somewhat well</b>	<b>I think Sarah has some trouble managing</b>	<b>I think Sarah has a lot of trouble managing</b>
1	2	3	4

- 3) If Sarah was your friend, how worried would you be about her overall emotional wellbeing? (Circle the number below the answer that best describes how you feel)



<b>I would not be at all worried about her emotional well-being</b>	<b>I would be a little bit worried about her emotional well-being</b>	<b>I would be quite worried about her emotional well-being</b>	<b>I would be extremely worried about her emotional well-being</b>
1	2	3	4

4) How long do you think it will take for Sarah to feel better again?

<b>One or two days</b>	<b>One or two weeks</b>	<b>One or two months</b>	<b>Longer than a few months</b>
1	2	3	4

5) What do you think is the underlying cause of Sarah's problems? Please rate your agreement with each of the following statements.

<b>Sarah feels like this because....</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neither agree or disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
<b>a)... it's just her personality</b>	1	2	3	4	5
<b>b)...of a chemical imbalance in her brain</b>	1	2	3	4	5
<b>c)...because problems like Sarah's run in families</b>	1	2	3	4	5
<b>d)...of problems from her childhood</b>	1	2	3	4	5
<b>e)...something bad happened to her in the past</b>	1	2	3	4	5
<b>f)... of everyday stresses</b>	1	2	3	4	5
<b>g)... she thinks too much</b>	1	2	3	4	5
<b>h)... she has a mental illness/psychological problem</b>	1	2	3	4	5
<b>i)... she has a physical medical problem</b>	1	2	3	4	5

6) Do you think Sarah needs help from another person to cope with her problems?

<b>Yes</b>	<b>No</b>	<b>Don't Know</b>
1	2	3

7) If you were friends with Sarah, how likely is it that you would help her with her problem”

<b>Very unlikely</b>	<b>Somewhat unlikely</b>	<b>Not sure</b>	<b>Somewhat likely</b>	<b>Very likely</b>
1	2	3	4	5

8) If you had a friend with a problem like Sarah’s, what might you do to help her? Write down some steps you would take to help. You can list up to four.

<b>1. The first step I would take is...</b>	
<b>2. Then I would...</b>	
<b>3. Then I would...</b>	
<b>4. Then I would...</b>	

9) How confident would you be in offering help with Sarah’s problem? Please circle the answer that best applies to you.

<b>I would not try to help, I would probably make things worse</b>	<b>Not very confident</b>	<b>Unsure</b>	<b>A Little Confident</b>	<b>Very confident I could help</b>
1	2	3	4	5

10) Please rate your agreement with each statement below by circling a number from 1 to 5:

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither agree or disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
<b>a) People with a problem like Sarah's could snap out of it, if they wanted</b>	1	2	3	4	5
<b>b) A problem like Sarah's is a sign of personal weakness</b>	1	2	3	4	5
<b>c) Sarah's problem is not a real medical illness</b>	1	2	3	4	5
<b>d) People like Sarah are unpredictable</b>	1	2	3	4	5
<b>e) People like Sarah lack self-control</b>	1	2	3	4	5
<b>f) People like Sarah are aggressive</b>	1	2	3	4	5
<b>g) People like Sarah are frightening</b>	1	2	3	4	5
<b>h) People like Sarah are dangerous</b>	1	2	3	4	5
<b>i) People like Sarah are needy</b>	1	2	3	4	5
<b>j) People like Sarah are dependent on others</b>	1	2	3	4	5
<b>k) People like Sarah are helpless</b>	1	2	3	4	5
<b>l) People like Sarah are strange</b>	1	2	3	4	5
<b>m) People like Sarah are different to other students</b>	1	2	3	4	5
<b>n) People like Sarah are no fun to be around</b>	1	2	3	4	5
<b>o) People like Sarah aren't good company</b>	1	2	3	4	5
<b>p) People like Sarah are just looking for attention</b>	1	2	3	4	5
<b>q) People like Sarah are overly dramatic</b>	1	2	3	4	5

11) Please rate your agreement with each statement below by circling a number from 1 to 5:

	Strongly Disagree	Disagree	Neither agree or disagree	Agree	Strongly Agree
a) Sarah's behaviour makes me feel angry	1	2	3	4	5
b) Sarah's behaviour makes me feel irritated	1	2	3	4	5
c) I would make fun of Sarah	1	2	3	4	5
d) Sarah's behaviour makes me feel sorry for her	1	2	3	4	5
e) I want to help Sarah with her problem	1	2	3	4	5
f) I understand how Sarah feels	1	2	3	4	5
g) Sarah's behaviour makes me feel uneasy	1	2	3	4	5
h) Sarah's behaviour makes me feel afraid	1	2	3	4	5
i) Sarah's behaviour makes me feel insecure	1	2	3	4	5

12) Please indicate your agreement with the following statements by circling a number from 1-4, where 1 = "definitely unwilling" to engage in the activity described and 4 = "definitely willing" to engage in the activity described.

	Definitely Unwilling			Definitely Willing
a) To go to Sarah's house after school	1	2	3	4
b) To invite Sarah to your house after school	1	2	3	4
c) Work on a school project with Sarah	1	2	3	4
d) Spend time with Sarah at the weekend	1	2	3	4
e) Have Sarah date your best friend	1	2	3	4
f) Have it become general knowledge that you and Sarah are good friends	1	2	3	4



## ELLA

Ella is in transition year. She loves music, and plays guitar and piano. She gets on well with her family, and Aisling, who has been her best friend since playschool. However, at school she feels nervous and self-conscious around the other students. She worries a lot about what everyone in her year thinks of her, and is afraid to speak up in class in case she says something wrong, or embarrasses herself. She gets extremely worried whenever she has to do a group project with girls she doesn't know very well, and often finds herself staying quiet during group discussions even if she has something to add to the conversation. If she has to give a presentation in class she feels tense and sick to her stomach for days beforehand. One of the girls, Louise, invited Ella to her 16<sup>th</sup> birthday party in the local GAA club, and her mam made her go. She spent the entire party thinking that everyone must be able to tell how nervous she is, and when she gets home she replays her conversations in her head over and over again. She is convinced that she has made a fool of herself, and that the rest of the group must have been laughing at her once she left the room. Her sister plays music with a local band, and despite desperately wanting to join a band herself, Ella feels sick at just the thought of auditioning. She feels that for the past few years she has been missing out on a lot of the things that other people her age are doing.

- 1) What, if anything, do you think is wrong with Ella?

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- 2) How well do you think Ella is able to manage in her day to day life? (e.g. keeping up with schoolwork, taking part in hobbies etc.).

(Circle the number below the answer that you feel best describes her)

<b>I think Ella manages extremely well in her day to day life</b>	<b>I think Ella manages somewhat well</b>	<b>I think Ella has some trouble managing</b>	<b>I think Ella has a lot of trouble managing</b>
<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>

- 3) If Ella was your friend, how worried would you be about her overall emotional wellbeing? (Circle the number below the answer that best describes how you feel)

<b>I would not be at all worried about her emotional well-being</b>	<b>I would be a little bit worried about her emotional well-being</b>	<b>I would be quite worried about her emotional well-being</b>	<b>I would be extremely worried about her emotional well-being</b>
1	2	3	4

- 4) How long do you think it will take for Ella to feel better again?

<b>One or two days</b>	<b>One or two weeks</b>	<b>One or two months</b>	<b>Longer than a few months</b>
1	2	3	4

- 5) What do you think is the underlying cause of Ella's problems? Please rate your agreement with each of the following statements.

<b>Ella feels like this because....</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neither agree or disagree</b>	<b>Agree</b>	<b>Strongly agree</b>
<b>a)... it's just her personality</b>	1	2	3	4	5
<b>b)...of a chemical imbalance in her brain</b>	1	2	3	4	5
<b>c)...because problems like Ella's run in families</b>	1	2	3	4	5
<b>d)...of problems from her childhood</b>	1	2	3	4	5
<b>e)...something bad happened to her in the past</b>	1	2	3	4	5
<b>f)... of everyday stresses</b>	1	2	3	4	5
<b>g)... she thinks too much</b>	1	2	3	4	5
<b>h)... she has a mental illness/psychological problem</b>	1	2	3	4	5

i)... she has a physical medical problem	1	2	3	4	5
--	---	---	---	---	---

6) Do you think Ella needs help from another person to cope with her problems?

<b>Yes</b>	<b>No</b>	<b>Don't Know</b>
1	2	3

7) If you were friends with Ella, how likely is it that you would help her with her problem?"

<b>Very unlikely</b>	<b>Somewhat unlikely</b>	<b>Not sure</b>	<b>Somewhat likely</b>	<b>Very likely</b>
1	2	3	4	5

8) If you had a friend with a problem like Ella's, what might you do to help her? Write down some steps you would take to help. You can list up to four.

<b>1. The first step I would take is...</b>	
<b>2. Then I would...</b>	
<b>3. Then I would...</b>	
<b>4. Then I would...</b>	

9) How confident would you be in offering help with Ella's problem? Please circle the answer that best applies to you.

<b>I would not try to help, I would probably make things worse</b>	<b>Not very confident</b>	<b>Unsure</b>	<b>A Little Confident</b>	<b>Very confident I could help</b>
1	2	3	4	5



10) Please rate your agreement with each statement below by circling a number from 1 to 5:

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neither agree or disagree</b>	<b>Agree</b>	<b>Strongly Agree</b>
<b>a) People with a problem like Ella's could snap out of it, if they wanted</b>	1	2	3	4	5
<b>b) A problem like Ella's is a sign of personal weakness</b>	1	2	3	4	5
<b>c) Ella's problem is not a real medical illness</b>	1	2	3	4	5
<b>d) People like Ella are unpredictable</b>	1	2	3	4	5
<b>e) People like Ella lack self-control</b>	1	2	3	4	5
<b>f) People like Ella are aggressive</b>	1	2	3	4	5
<b>g) People like Ella are frightening</b>	1	2	3	4	5
<b>h) People like Ella are dangerous</b>	1	2	3	4	5
<b>i) People like Ella are needy</b>	1	2	3	4	5
<b>j) People like Ella are dependent on others</b>	1	2	3	4	5
<b>k) People like Ella are helpless</b>	1	2	3	4	5
<b>l) People like Ella are strange</b>	1	2	3	4	5
<b>m) People like Ella are different to other students</b>	1	2	3	4	5
<b>n) People like Ella are no fun to be around</b>	1	2	3	4	5
<b>o) People like Ella aren't good company</b>	1	2	3	4	5
<b>p) People like Ella are just looking for attention</b>	1	2	3	4	5
<b>q) People like Ella are overly dramatic</b>	1	2	3	4	5

11) Please rate your agreement with each statement below by circling a number from 1 to 5:

	Strongly Disagree	Disagree	Neither agree or disagree	Agree	Strongly Agree
a) Ella's behaviour makes me feel angry	1	2	3	4	5
b) Ella's behaviour makes me feel irritated	1	2	3	4	5
c) I would make fun of Ella	1	2	3	4	5
d) Ella's behaviour makes me feel sorry for her	1	2	3	4	5
e) I want to help Ella with her problem	1	2	3	4	5
f) I understand how Ella feels	1	2	3	4	5
g) Ella's behaviour makes me feel uneasy	1	2	3	4	5
h) Ella's behaviour makes me feel afraid	1	2	3	4	5
i) Ella's behaviour makes me feel insecure	1	2	3	4	5

12) Please indicate your agreement with the following statements by circling a number from 1-4, where 1 = "definitely unwilling" to engage in the activity described and 4 = "definitely willing" to engage in the activity described.

	Definitely Unwilling			Definitely Willing
a) To go to Ella's house after school	1	2	3	4
b) To invite Ella to your house after school	1	2	3	4
c) Work on a school project with Ella	1	2	3	4
d) Spend time with Ella at the weekend	1	2	3	4
e) Have Ella date your best friend	1	2	3	4
f) Have it become general knowledge that you and Ella are good friends	1	2	3	4

**13) Have you, or anyone close to you, ever experienced a mental illness? Please circle your answer.**

(a) Yes

(b) No

## Appendix D – Recruitment Materials

### Sample Information Letter for Schools

February

2019

FAO: Deputy Principal/Principal

I am a PhD candidate at the School of Psychology at Trinity College Dublin. I am currently conducting research into adolescent understanding of mental health and wellbeing. I am writing to invite the students at your school to take part in my research.

Adolescence is a key period for the emergence of mental health difficulties, which are currently on the rise in Irish young people. Mental health problems can persist throughout adolescence and into adulthood, so getting help early is vitally important.

Peers are often one of the most important sources of help and support for young people experiencing problems, but there is a lack of research into their knowledge and beliefs surrounding mental health and wellbeing. I'm hoping to address this lack of research in my study.

I am looking for young people aged 16-18 to fill out an anonymous questionnaire on this topic. The questionnaire would take approximately 40 minutes to complete.

I would be extremely grateful for any help you could give me. If your school is open to taking part, or you have any questions at all, please contact myself or my supervisor at the contact details below.

Kind regards,

Holly Rose Hanlon

**Contact Details:**

Holly Hanlon, PhD Candidate,

Email: [hanlonh@tcd.ie](mailto:hanlonh@tcd.ie)

**Supervisor:** Dr. Lorraine Swords

Email: [swordsl@tcd.ie](mailto:swordsl@tcd.ie)

Tel: 01 896 3638



## Sample Recruitment Email for Schools

Dear Sir/Madam,

I am a PhD candidate in Psychology at Trinity College Dublin, conducting research into adolescent wellbeing. I'm contacting you to enquire about the possibility of recruiting participants for my research through your organisation.

Adolescence is a time when many mental health difficulties begin to appear for the first time, and peers are often an important source of help for those experiencing problems. I am interested in the knowledge and beliefs surrounding mental health and wellbeing in this age group, with the hope that identifying gaps in this knowledge may help us to improve interventions in the future.

At the present time, I am looking for young people aged 16-18 to fill out a questionnaire on this topic. The session should take no longer than an hour.

I would be extremely grateful for any help you could give me. If you have any questions at all, please do not hesitate to contact myself or my supervisor at the contact details below.

Regards,

Holly Hanlon

### **Contact Details:**

Holly Hanlon, PhD Candidate,

Email: [hanlonh@tcd.ie](mailto:hanlonh@tcd.ie)

**Supervisor:** Dr. Lorraine Swords

Email: [swordsl@tcd.ie](mailto:swordsl@tcd.ie)

Tel: 01 896 3638

## Appendix E – Parental Information and Consent Form

Dear Parent/Guardian

Your child has been invited to take part in a research study about young people's understanding of mental health and wellbeing. The study is being carried out by Holly Hanlon, with the supervision of Dr. Lorraine Swords from the School of Psychology, Trinity College Dublin. Please let us know if you are satisfied for your child to take part by filling out the consent form below.

In this study, your son or daughter will be given a short scenario about a young person to read. The scenarios will describe a young person going through a difficult time (e.g. worrying about an upcoming exam). They will then be asked to complete a survey that asks a number of questions about the scenario they have just read (such as whether the young person needs help from another person, or how long it might take them to feel better). This will be repeated with three more scenarios.

Participation in this study will take no more than 40 minutes in total. If your son or daughter has your permission, they will then be asked if they would like to take part. They may stop at any time during the study if they wish, without penalty. The study is anonymous and confidential - names will not appear on individual questionnaires. For this reason, young people may withdraw their answers from the study up until the end of the testing session only – once answer sheets are submitted they will be anonymised and unavailable for individual withdrawal. There are limits to confidentiality, and if at any point during the session your child communicates anything to the researcher that makes us concerned, we are obligated to inform a member of school staff.

The data will be stored in accordance with the Freedom of Information and the Data Protection Acts. People taking part are entitled to access data stored about them, in this case the data will be scored as group scores and participants will not be identified individually.

If you have any further questions about the study or would like to read a summary of the findings of the study, please do not hesitate to contact one of us at the following contact details:

Holly Hanlon:

*PhD Candidate,*

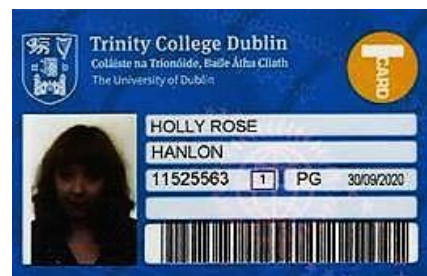
*School of Psychology,*

*Aras an Phiarsaigh,*

*Trinity College*

*Dublin 2.*

*Email: [hanlonh@tcd.ie](mailto:hanlonh@tcd.ie)*



Supervisor:

*Dr. Lorraine Swords,  
School of Psychology,*

*Aras an Phiarsaigh,  
Trinity College,*

*Dublin 2.*

*Email: [swordsl@tcd.ie](mailto:swordsl@tcd.ie)*

*Tel: 01 896 3638*

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**Consent Form**

Please first sign below to indicate that you have read and understand the information above and that you give your child consent to participate, if they wish to do so. You may keep the information section of this page if you like; please send the consent section back to the researcher.

Name of child (Please print): \_\_\_\_\_

Name of parent/guardian (please print): \_\_\_\_\_

Signature of parent/guardian: \_\_\_\_\_



## Appendix F – Participant Information and Consent Form

Thank you for agreeing to take part in this study about young people’s understanding of wellbeing. The study is being carried out by Holly Hanlon, with the supervision of Dr. Lorraine Swords from the School of Psychology, Trinity College Dublin.

In this study, you will be given a short scenario about a young person to read. You will then be asked to answer a number of questions about the scenario you have just read, for example, whether you think the young person needs help from another person, or how long you think it might take for them to feel better. This will be done with four scenarios in total. Please read the instructions carefully. You can take as much time as you wish.

Participation in this study will take about 40 minutes in total. You can stop at any time if you wish, without penalty. The study is anonymous and confidential - your name will not appear beside your answers. For this reason, you may withdraw your answers from the study up until the end of the testing session only – once your answer sheets are submitted, we will not be able to identify them individually.

If at any point during the session you communicate to the researcher that you or someone else is in danger, we are obligated to inform a member of school staff.

The data will be stored in accordance with the Freedom of Information Act - you are entitled to access data stored about you. In this case the data will be scored as group scores and participants will not be identified individually.

If you have any further questions about the study or would like to read a summary of the findings of the study, please contact one of us at the following contact details:

Holly Hanlon,  
*PhD Candidate,*  
*School of Psychology,*  
*Aras an Phiarsaigh,*  
*Trinity College*  
*Dublin 2.*  
*Email: [hanlonh@tcd.ie](mailto:hanlonh@tcd.ie)*



Supervisor:  
*Dr. Lorraine Swords,*  
*School of Psychology,*  
*Aras an Phiarsaigh,*  
*Trinity College,*  
*Dublin 2.*  
*Email: [swordsl@tcd.ie](mailto:swordsl@tcd.ie)*

*Tel: 01 896 3638*

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**Consent Form**

Please first sign below to indicate that you have read and understand the information above and that you give your consent to participate. You may keep the information section of this page if you like; please give the consent section to the researcher.

Name (please print): \_\_\_\_\_

Signature: \_\_\_\_\_

## **Appendix G – Participant Debrief Sheet**

Thank you for participating in this study by Holly Hanlon, supervised by Dr. Lorraine Swords from the School of Psychology, Trinity College Dublin. The aim of this study was to find out how much young people understand about anxiety disorders. The study also measured stigma toward people with anxiety, and help-giving responses.

Thank you again for taking part. If you have any questions or concerns about the study please do not hesitate to ask, or contact one of us at the contact details below.

We do not think that anything in the materials presented will cause you any distress. However, if you find that any of the materials or your participation in the study does cause you some distress, you may wish to contact a support service, which we have listed below:

**Samaritans Ireland** at Tel: 01 872 7700 (address 151 Marlborough Street, Dublin 1, Website: [www.samaritans.org](http://www.samaritans.org)).

**Teenline Ireland** at Tel: 01 462 2124

If you would like to learn about mental health in general, you can visit [www.yourmentalhealth.ie](http://www.yourmentalhealth.ie)

You may take this debriefing sheet away with you if you wish.

### **Contact details:**

Holly Hanlon:

*PhD Candidate,*

*School of Psychology,*

*Aras an Phiarsaigh,*

*Trinity College,*

*Dublin 2.*

*Email: [hanlonh@tcd.com](mailto:hanlonh@tcd.com)*

Supervisor:

*Dr. Lorraine Swords,*

*School of Psychology,*

*Aras an Phiarsaigh,*

*Trinity College,*

*Dublin 2*

*Email: [swordsl@tcd.ie](mailto:swordsl@tcd.ie)*

*Tel: 01 896 3638.*

**Appendix H – Ethical Approval Letter**

**F.A.O. Holly Hanlon**

**Approval ID: SPREC042018-1**

**School of Psychology Research Ethics Committee**

16th November 2018

Dear Holly,

The School of Psychology Research Ethics Committee has reviewed your application entitled "Anxiety Literacy in Adolescents: Relationship to Stigma and Help-Giving Responses" and I am pleased to inform you that it was approved.

Adverse events associated with the conduct of this research must be reported immediately to the Chair of the Ethics Committee.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Richard Carson". The signature is fluid and cursive, with a long horizontal stroke at the end.

Richard Carson

Chair,

School of Psychology Research Ethics Committee

**Appendix I – Bivariate Correlations between key variables included in process models in Chapter 12**

*Table 12.7. Correlations between key variables for GAD*

<b>Variable</b>	<b>Weak not Sick</b>	<b>Anger</b>	<b>Pity</b>	<b>Fear</b>	<b>Social Distance</b>	<b>Help-giving Intentions</b>
<i>Weak not Sick</i>	1	0.441*	0.181*	0.215*	0.347*	-0.332*
<i>Anger</i>		1	0.268*	0.366*	0.429*	-0.284*
<i>Pity</i>			1	0.054	0.337*	-0.330*
<i>Fear</i>				1	0.250*	-0.203*
<i>Social Distance</i>					1	-0.345*
<i>Help-giving Intentions</i>						1

\* p is significant at the 0.05 level (one-tailed) \*\* p is significant at the 0.01 level (one-tailed).

*Table 12.8. Correlations between key variables for panic disorder*

<b>Variable</b>	<b>Weak not Sick</b>	<b>Anger</b>	<b>Pity</b>	<b>Fear</b>	<b>Social Distance</b>	<b>Help-giving Intentions</b>
<i>Weak not Sick</i>	1	0.532*	0.092	0.349*	0.263*	-0.271*
<i>Anger</i>		1	0.143*	0.512*	0.363*	-0.408*
<i>Pity</i>			1	-0.008	0.351*	-0.264*
<i>Fear</i>				1	0.249*	-0.243*
<i>Social Distance</i>					1	-0.335*0
<i>Help-giving Intentions</i>						1

\* p is significant at the 0.05 level (one-tailed) \*\* p is significant at the 0.01 level (one-tailed).

*Table 12.9. Correlations between key variables for social anxiety disorder*

<b>Variable</b>	<b>Weak not Sick</b>	<b>Anger</b>	<b>Pity</b>	<b>Fear</b>	<b>Social Distance</b>	<b>Help-giving Intentions</b>
<i>Weak not Sick</i>	1	0.422*	0.063	0.328*	0.256*	-0.196*
<i>Anger</i>		1	0.203*	0.626*	0.407*	-0.387*
<i>Pity</i>			1	0.026	0.491*	-0.381*
<i>Fear</i>				1	0.373*	-0.237*
<i>Social Distance</i>					1	-0.437*
<i>Help-giving Intentions</i>						1

\* p is significant at the 0.05 level (one-tailed) \*\* p is significant at the 0.01 level (one-tailed).