

**What is a Mental Disorder? Examining Concept Breadth**

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## **Abstract**

Mental health has become a major public health priority worldwide, with large-scale awareness campaigns addressing stigma and educating the public about its importance. However, the central and fundamental issue of how to define mental disorder has remained primarily a theoretical debate among scholars and professionals, with little attention given to lay perspectives. An overlooked yet valuable construct in addressing this issue is concept breadth—the expansiveness of what individuals and groups consider to be mental disorders—which varies among laypeople.

This thesis comprises six chapters with eight empirical studies that aim to investigate the lay conceptualisation of mental disorder, specifically through concept breadth. Chapter 1 introduced the broader context of the conceptualisations of mental disorder, from both professional and lay perspectives. Literature on theoretical debates and empirical work on professional and lay perspectives is reviewed respectively, along with discussions on potential relationships between concept breadth and various mental health variables. Building on this foundation, Chapter 2 initiated the empirical investigation by employing a vignette design to understand the breadth and features of laypeople’s mental disorder-related concepts, as well as their correspondence to the professional definition. The findings revealed discrepancies between lay and professional concepts and systematic patterns of features and breadth in these mental disorder-related concepts. As concept breadth is a relatively unexplored construct, developing scales to assess the construct is a necessary step to enable systematic examination, a task undertaken in Chapter 3. This chapter presented four studies that together created item pools for two concept breadth scales, established reliabilities and validities of the scales, and identified associations with other mental health variables. Chapter 4 applied these scales to investigate cultural variations in concept breadth

in two studies, one using an American sample and the other using an Australian sample. In the latter study, White participants were found to hold broader concepts of mental disorder than their Asian counterparts, with some factors partially mediating this difference. Chapter 5 examined the relationships among concept breadth, self-diagnosis, and help-seeking behaviours, revealing that broader concepts of mental disorder predicted self-diagnosis, and hence, help-seeking behaviours. Concept breadth emerged as the second most influential factor following distress, highlighting its significance alongside other well-researched mental health variables. Chapter 6 summarised and interpreted the patterns of findings across the eight studies and discussed the implications of findings on theories, research, and practices.

In summary, this thesis offered the first systematic exploration of a novel construct—concept breadth in the context of mental disorder. This research program has demonstrated that (1) concept breadth can be reliably and validly measured, (2) individual and cultural differences exist in lay concepts of mental disorder, and (3) concept breadth plays a role in influencing other important mental health variables, such as stigma, self-diagnosis, and help-seeking. These findings shed light on concept breadth and underscore the need to integrate lay perspectives into mental health theories, research, campaigns, and clinical practices.

## **Declaration**

I declare that:

- (a) this thesis comprises only my original work towards the Doctor of Philosophy except where indicated in the preface;
- (b) due acknowledgement has been made in the text to all other material used; and
- (c) the thesis is fewer than the maximum word limit in length, exclusive of tables, maps, bibliographies, and appendices.

Jesse Tse

## Preface

This thesis is submitted with publications. Three of the chapters (Chapters 2, 3, and 5) are published as peer-reviewed manuscripts. I am the first author on all three papers, and I have contributed to over 50% of the manuscripts. The respective contribution percentage and tasks for each author are listed as followed, along with the full references for these publications.

### Chapter 2 published by BMC Psychiatry on 3 April 2023

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Author	Contribution (%)	Task contribution
Jesse Tse	90%	Study conception and design, material preparation, data collection and analysis, manuscript drafting and editing
Nick Haslam	10%	Study conception and design, editing manuscript, funding acquisition

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## Chapter 1: General Introduction

In recent decades, mental health has become a significant public health priority in many developed Western societies. Recognising its importance, substantial governmental funding and resources have been invested in the proliferation of large-scale mental health awareness campaigns and interventions, such as Beyond Blue in Australia (Jorm, Christensen, et al., 2005) and Time to Change in the United Kingdom (Evans-Lacko et al., 2014). Despite these efforts, the prevalence of mental disorder continues to rise, and new problems like the rapid surge in self-diagnoses on social media platforms like TikTok (Gilmore et al., 2022) have emerged, particularly among young people (Twenge et al., 2019). These developments raise the possibility that these campaigns have had unintended paradoxical effects.

To explain this phenomenon, the *prevalence inflation hypothesis* suggests that raising awareness encourages more accurate reporting of previously under-recognised conditions, while also contributing to some individuals misinterpreting milder forms of distress as signs of mental ill health (Foulkes & Andrews, 2023). This unintended consequence underscores the inherent difficulties in drawing a clear line between normality and abnormality, health and illness, disorder and non-disorder. These distinctions have never been easy to establish, especially in the field of mental health and psychiatry.

This challenge has become increasingly prominent in recent decades with an apparent cultural rise in sensitivity to harm (Haslam, 2016) and the development of the Internet and social media (Haltigan et al., 2023), which facilitate the spread of extreme viewpoints and misinformation by enabling the easy amplification of problematic ideas. The conceptualisation and definition of mental disorder have profound influences on various aspects of public mental health (Stein et al., 2021), including individual diagnosis,

evaluations of criminal responsibility and sentencing, research funding, and public policy. Conceptualisations held by professionals and academics are highly influential in these domains (Stein et al., 2010), but those held by members of the public carry equal, if not more, relevance to the everyday reality of mental health and illness (Jutel, 2010). It is ultimately laypeople who decide whether they or others are suffering from mental health problems (Jaspers, 1997; Olafsdottir & Pescosolido, 2011), yet existing literature rarely focuses on lay conceptualisations.

Adding to these complexities, the boundaries of the concept of mental disorder appear to be shifting. Haslam's (2016) Concept Creep theory proposes that psychological concepts, including mental disorder, have broadened to incorporate qualitatively new and quantitatively less severe phenomena over time. According to the theory, this semantic expansion is not confined to mental disorder but has occurred in many harm-related concepts over recent decades (Haslam et al., 2020).

While concept creep describes historical variations in the concept of mental disorder, individual variations in the *breadth* or expansiveness of people's concepts can also be investigated cross-sectionally. How broad or narrow an individual's concept of mental disorder is, not only defines what they perceive as a mental disorder, but also meaningfully influences their attitudes and actions toward their own mental health and toward others with mental health problems. Clarifying how and why people's concepts of mental disorder differ and the effects of these differences on their mental-health-related attitudes and behaviours become a crucial scientific task, vital for understanding the consequences of broadened concepts of mental disorder for public mental health.

### **Defining Mental Disorder**



In determining how to define mental disorder, two types of definitions are relevant—extensional and intensional definitions. The former refers to defining the range of reference of the concept; while the latter refers to identifying its common features (Jopek-Bosiacka, 2023; ten Hacken, 2015). In the following sections, both extensional and intensional definitions of mental disorder will be explored and discussed from the professional (Section 1.2.1) and lay perspectives (Section 1.2.2).

### ***Professional Conceptualisations***

How to define mental disorder is one of the most contentious questions across sociology, psychology, and psychiatry (Bolton, 2008; Link & Phelan, 2001). Ongoing debates and scrutiny surround the most precise conceptualisation of mental disorder and the appropriate terminology to describe mental health conditions. Diverse opinions among scholars and clinicians render consensus on a universal definition and terminology nearly unattainable. Even within a 10-year period (1980 to 1990), 17 different definitions of mental illness were published in the mental health literature (Schinnar et al., 1990). Other scholars believe there is no single definition possible or necessary (e.g., Brulde, 2010; Fountoulakis, 2022; Kirmayer & Young, 1999). These debates have largely driven the evolution of the professional definition (e.g., Stein et al., 2010).

From a more philosophical perspective on defining mental disorder intensionally, there are two major accounts on the nature of mental disorder – naturalistic and social constructionist. The former aims to identify an objective basis for identifying mental disorder in order to delineate genuine biological illnesses from others. The latter posits that mental disorder is a social construct whose features and boundaries vary over time and across cultures, reflecting human interests and values rather than any natural or objective category.

In an effort to combine aspects of these two kinds of account, Wakefield (1992b) proposed an influential hybrid perspective – the *harmful dysfunction analysis* – defining mental disorder with two components, harm and dysfunction. *Harm* refers to the negative impacts of a condition according to sociocultural values, whereas *dysfunction* refers to internal mechanisms that fail to perform their original, evolved functions (Wakefield, 1999, 2007). Wakefield’s analysis was an attempt to address the conceptual shortcomings of the operational definition of mental disorder adopted by the *Diagnostic and Statistical Manual of Mental Disorders* (3rd ed., rev.; *DSM-III-R*; American Psychiatric Association [APA], 1987), which he criticised as being overly focused on diagnostic reliability. The shortcomings he identified included the lack of a theoretical foundation, exclusive reliance on symptom-based diagnostic criteria, and insufficient effort in incorporating cultural considerations, which might eventually lead to medicalising everyday life problems (Wakefield, 1992b). Wakefield himself admitted that while the harmful dysfunction analysis aimed to provide a relatively objective basis via the dysfunction component, the harm component is inevitably based on social judgement (Wakefield, 1999, 2007). To strengthen the objectiveness of his analysis, Wakefield grounded the dysfunction component in evolutionary theory (Wakefield, 1992b). However, critics argued that there are implicit normative (i.e., socially constructed) meanings in the notion of “natural function” (Kirmayer & Young, 1999; Lilienfeld & Marino, 1995; Searle, 1995).

Opponents of the harmful dysfunction analysis argued that it does not reflect how the concept of mental disorder is used either by professionals or by laypeople (Kirmayer & Young, 1999). To reflect how the concept is used in everyday life, Lilienfeld and Marino (1995) proposed an alternative account, describing mental disorder as a Roschian concept. Roschian concepts are mental categorisations of natural entities that have fuzzy boundaries

and no defining features (Rosch, 1973; Rosch & Mervis, 1975). These concepts are made up of a prototype that encompasses all the features of the category, so that actual examples of the category deviate by degrees from the prototype. In the case of the concept of “mental disorder”, prototypical disorders might be schizophrenia and depression. The features of concepts arise from repeated interactions with real entities in the world. As the category boundaries are fuzzy and individuals’ experiences vary, people’s concepts may not completely overlap, leading to discrepancies in whether certain marginal conditions are agreed to constitute mental disorders.

Evolving from these perspectives and debates, the *DSM-5* and *DSM-5-TR* intensionally define a mental disorder as “a syndrome characterized by clinically significant disturbance in an individual’s cognition, emotion regulation, or behavior that reflects a dysfunction in the psychological, biological, or developmental processes underlying mental functioning” (p. 20), while stipulating that social deviance or conflicts do not qualify as mental disorders unless they are a direct result of an individual’s dysfunction (APA, 2013, 2022). This definition is echoed in the other major classification system – the *International Classification of Diseases, Eleventh Revision* (11th ed.; ICD-11; World Health Organization [WHO], 2022). Although this definition is accepted and utilised by many professionals and researchers, some of the conceptual issues raised by critics remain unresolved. This allows for continued controversies regarding the inclusion or exclusion of certain conditions as mental disorders (e.g., caffeine withdrawal; Addicott, 2014; Budney et al., 2015) and the modification of specific criteria of certain disorders (Miller et al., 2014; J. C. Wakefield, 2013).

It is clear that the professional definition of mental disorder has been formulated and debated amongst scholars and clinicians who contribute theoretical and clinical perspectives

to its conceptualisation. The conceptualisation evolves through a continuous iterative cycle, driven by critiques and evidence that inform revisions of the definition and conditions. The general consensus amongst scholars acknowledges that no one definition can perfectly capture the complexity of mental disorder without sacrificing either clinical utility, diagnostic reliability, or conceptual validity. As Wakefield and other scholars have asserted, defining mental disorder ultimately involves some value judgements and the concept's boundaries are relative to cultures to some extent (Lilienfeld & Marino, 1995; Wakefield, 1999). By specifying that mental disorder is distinct from mere social deviance, it appears that even the current definition proposed by the two major classification systems incorporates elements that involve a degree of value judgement. If the concept of mental disorder is, at least in part, inherently social, how the majority of the society—lay public—define the concept becomes an equally, if not more, important topic.

### ***Lay Conceptualisations***

To a certain extent, the professional conceptualisation of mental disorder is influenced by the lay definition. For instance, the conceptual analysis approach, utilised by the editor of the *DSM-III* and the *DSM-III-R*, Robert Spitzer, assessed the proposed official definition of the concept against relatively uncontroversial and widely shared judgements about what is a mental disorder and what is not. With a conceptual account that broadly confirmed these unambiguous judgements, the controversial cases could be considered. These widely shared judgements should therefore represent the public's judgement and opinions (Spitzer & Williams, 1982). Despite this, most specific disorders remain unfamiliar to the laypeople. Ongoing concerns regarding discrepancies between professional and lay definitions persist. Comparing lay concepts against official disorders is one way to investigate the extensional definition of mental disorder. When lay concepts do not align with

professional concepts in the direction of being narrower, members of the public may fail to recognise the need for professional attention and help or disagree with professional opinion about appropriate treatment methods. This disconnection may cause delays in help-seeking, discontinuation of treatment, worsening of symptoms, and prolonged suffering. These would generate high costs for the individuals concerned, as well as for society.

The relevance of lay perspectives should not be ignored. Laypeople, rather than professionals, are usually the first to classify experiences as problematic (Jutel, 2010). Many symptoms are often dealt with outside the mental health system, similar to physical illnesses (Dean, 1986; Stoller et al., 1993). Personal experiences and symptoms are most often evaluated and diagnosed by individuals themselves long before seeking any professional help or receiving any formal diagnostic labels (Jaspers, 1997; Olafsdottir & Pescosolido, 2011). Therefore, what laypeople consider to be mental disorders is of paramount significance.

Surprisingly, the amount of empirical research focused on lay concepts is disproportionate to its importance. Moreover, perhaps because of the complexity of mental disorder, most studies have employed a qualitative approach. The first large-scale qualitative study on lay concepts and perceptions of mental illness was conducted by Star in 1952 (Star, 1952, 1955). She interviewed 3500 Americans and asked them “When you hear someone say that a person is ‘mentally ill’, what does that mean to you?” (Star, 1952, p. 2). She found that most people had difficulties in articulating the concept, and when they did, they described it as “insane”, “crazy”, “nuts”, and “out of their minds”, characterised by “unpredictability, impulsiveness, loss of control, extreme irrationality, and legal incompetence” and exemplified by symptoms like hallucinations, delusions, or violent behaviours. This suggested that the participants were essentially equating the concept of

mental ill health to psychosis, with fewer than half referencing conditions relating to neurosis, or emotional or personality disturbances. However, when asked directly whether someone who is mentally ill is “out of their mind” or “insane”, most participants responded “no”. Therefore, it appears that people’s concepts of mental illness were inconsistent and illogical at times. Apart from the open-ended questions, Star also asked participants questions about six descriptions of people who have either paranoid schizophrenia, simple schizophrenia, anxiety neurosis, alcoholism, compulsive phobia, or childhood behaviour disorder. Of these six people, only the most extreme case, the person with paranoid schizophrenia, was seen as mentally ill by the majority of participants.

Star’s study pioneered the use of vignettes in examining lay concepts of mental disorder, but it also yielded insightful conclusions about the American public’s views on mental disorders in the 1950s. First, people thought that all mental illnesses develop towards psychosis, and therefore, the end point—psychosis—equates to the whole spectrum of mental illnesses. Second, people associated “mental” with cognitive functions; if cognitive functions are not impaired, then there is no mental illness. Third, people employed either-or reasoning whereby the presence of even partially physical symptoms ruled out the existence of mental disorder. Fourth, mental illness was used as a residual category to explain behaviours when there was no other possible explanation. Fifth, because of the “illness” word, people expected acute onset as in physical illness, and therefore did not infer mental illness when symptoms had a gradual onset or had been enduring. Sixth, if a behaviour was seen as due to heredity or temperament, and thus outside of self-control, then it was not considered a mental illness. Star ultimately concluded that lay concepts of mental disorder were much narrower than psychiatric concepts, arguing in her conference

talk that “it [psychiatry] is more accepted than it is familiar, more familiar than it is understood” (Star, 1952, p. 25).

Seventy years have passed since Star’s research, but many studies since then have utilised her vignettes and asked participants how likely the person described has a “mental illness” (e.g., Link et al., 1999; Meyer, 1964). Later studies revealed that people identified more vignettes as instances of mental illness, indicating that concepts of mental disorder have broadened over time. Direct comparisons between data from 1952 and 1996 provided further support for this trend. Phelan et al. (2000) conducted 622 interviews as part of the Mental Health Module of the 1996 General Social Survey (GSS) utilising one of Star’s (1955) study questions, asking participants what “mentally ill” meant to them and compared the data with 337 archived interviews from the Star’s study. Phelan et al. (2000) found that there were significant decreases in the percentage of participants mentioning psychosis exclusively or referring to anxiety/mood problems and increases in participants mentioning behaviours indicating mental deficiency/cognitive impairment, social deviance, and other non-psychotic syndromes. They concluded that in 44 years, public definitions of mental illness have broadened beyond psychosis. However, the degree of alignment of these definitions with the psychiatric definition remained unclear. Nevertheless, the rising breadth of lay definitions implies convergence with the broader psychiatric definition and with the proliferation of disorders in the *DSM*.

In addition to direct comparison with Star’s original work, Link et al. (1999) also developed a new set of vignettes on schizophrenia, drug dependence, alcohol dependence, major depressive disorder, and subclinical worries based on the *DSM-IV* and included them in the 1996 GSS. A total of 1444 Americans were read one of the vignettes and asked about the label and potential cause of the described situation, and the dangerousness of the

protagonist and desired social distance from them. Link et al. (1999) found that 88%, 69%, 49%, 44%, and 22% of participants agreed that the person described in the schizophrenia, major depressive disorder, alcohol dependence, drug dependence, and subclinical worries vignettes, respectively, had a mental illness. However, when asked specifically if the described person has the specific disorder (i.e., schizophrenia, alcohol dependence, etc.), many more participants indicated this was very or somewhat likely (above 80% for all four disorders). Although different sets of vignettes and disorders were used, Link and colleagues contended that these findings represented a substantial increase in participants identifying these *DSM-IV* disorders as mental illnesses, compared to Star's (1955). Despite the increases in identification, discrepancies between professional and lay definitions persisted. This was possibly due to the greater reluctance of GSS participants to employ the general label of "mental illness" relative to the specific disorder labels.

Although these studies have provided valuable understandings of the changing breadth or extension of lay concepts of mental disorders, their uses of qualitative interviews and a maximum of six vignettes cannot encompass the diverse range of mental disorders. To investigate the degree of alignment between professional and lay concepts, a more comprehensive and quantitative approach was necessary.

In the early 2000s, Haslam and Giosan (2002) conducted a pilot study looking into laypeople's concepts of mental disorder, using a set of 68 vignettes. These 68 vignettes included descriptions of individuals experiencing 47 disorders representing diverse adult disorders in the *Diagnostic and Statistical Manual of Mental Disorders* (fourth ed.; *DSM-IV*; APA, 1994) and 21 non-disorders (i.e., a range of neurological conditions, socially deviant behaviours, and character flaws or bad habits). Thirty-one psychology undergraduates each rated a subset of 17 vignettes. For each vignette, they were asked to make a judgement



whether the people in each vignette have a mental disorder and rate their agreement with 15 follow-up statements assessing possible defining features of mental disorder. Analysis of the aggregated means on each vignette revealed that participants' concepts of mental disorder aligned only moderately with the *DSM-IV*, indicating that participants held a narrower concept of mental disorder than the professional concept. This finding was replicated in a subsequent study of judgments of childhood disorders (Giummarra & Haslam, 2005).

Research into lay concepts of mental disorder has been unfortunately scarce, especially in the past two decades when new editions of the *DSM* have been published. Very few comprehensive, quantitative studies have been conducted. Most recent research focuses on only a small subset of conditions (e.g., Rusch et al., 2012) or examines related but different concepts (see Tikkinen et al., 2019, on the concept of "disease"). The present understanding of lay concepts of mental disorder (intensional definition), as well as their breadth and alignment with the current official definition of mental disorder embodied in the *DSM-5* and *DSM-5-TR* (extensional definition), remains very limited.

### **Concept Creep**

Many scholars have observed a tendency for concepts associated with mental health and illness to become more widely employed in recent decades. These trends are often described as pathologisation, medicalisation, or psychiatrisation. Pathologisation involves labelling everyday behaviours and experiences as pathological, thus necessitating medical or psychological treatment (Brinkmann, 2016). Medicalisation refers to the process by which non-medical issues are redefined and addressed as medical conditions, often involving the prescription of medication (Conrad & Slodden, 2013). Psychiatry extends this concept by specifically focusing on the framing of behavioural and emotional problems within the

domain of psychiatry, often leading to expanded use of psychiatric diagnoses and interventions (Beeker et al., 2021). More recently, concept creep, a parsimonious theory proposed by Haslam (2016), considers the expansion of mental disorder-related concepts as an example of a generalised semantic inflation of harm-related concepts.

Haslam (2016) illustrated concept creep with six examples: abuse, addiction, bullying, mental disorder, prejudice, and trauma. A common thread among these expanded concepts is that they represent harmful behaviours or experiences. He proposed that there are two dimensions of concept creep—horizontal and vertical creep. These two dimensions are not mutually exclusive.

Horizontal creep occurs when a concept is applied to a new context, representing a qualitative expansion. For example, addiction traditionally involves dependencies on physical substances, but it has also broadened to refer to non-substance dependencies such as excess gambling and use of the Internet. In fact, gambling disorder was introduced as an official disorder under the Substance-Related and Addictive Disorders classification in the *DSM-5* (APA, 2013). This extension into behavioural dependencies reflects a horizontal expansion of the addiction concept to include qualitatively new phenomena (Haslam, 2016).

Vertical creep occurs when a concept extends to a milder form of the phenomenon, representing a quantitative expansion. This can occur when the diagnostic criteria for a disorder are loosened, such as the removal of the bereavement exclusion in major depressive disorder (MDD) from the *DSM-IV* to the *DSM-5*. By the removal, people who experience depressive symptoms following bereavement could now be diagnosed as having MDD, meaning the threshold for diagnosing MDD is lowered (Wakefield et al., 2007).

Numerous scholars have highlighted the proliferation of new disorders across editions of the *DSM* (Frances, 2013b; Haslam, 2016; Horwitz & Wakefield, 2007), a trend

that may reflect horizontal concept creep. However, there is mixed evidence for whether or not vertical concept creep, a tendency for existing disorders to broaden or become less stringent, has occurred in the *DSM*. Two systematic studies compared the diagnostic criteria for a large set of disorders for the *DSM-III* and the *DSM-IV-TR* (Boysen, 2011) and for the *DSM-IV-TR* and the *DSM-5* (Boysen & Ebersole, 2014), using conceptual analysis by expert judges. Both studies found that the number of disorders showing inflation outnumbered those showing deflation. A more recent meta-analysis conducted by Fabiano and Haslam (2020) reviewed 123 studies where participants were diagnosed using two consecutive editions of the *DSM*, from the *DSM-III* to the *DSM-5*. They concluded that while there were systematic increases or decreases in diagnostic rates due to changes in diagnostic criteria for particular disorders (e.g., expansions for ADD/ADHD, alcohol dependence, and anorexia nervosa and contractions for autism, alcohol dependence, and conduct disorder), there was no consistent inflationary or deflationary trend. Widespread concerns about (vertical) diagnostic inflation in the *DSM* (e.g., Frances, 2013b), therefore appear to be unwarranted.

Another way to examine historical change in concepts of mental disorder is to employ computational linguistic analysis on large text corpora. Vylomova et al. (2019) examined the semantic breadth of five concepts including “addiction” in a sample of more than 800,000 psychology abstracts published from 1970 to 2019. They showed that the meaning of “addiction” broadened horizontally over this period from relating only to physical dependency to encompassing psychological dependency. To investigate whether vertical creep has occurred in selected mental disorder concepts, Xiao et al. (2023) examined the changes in the emotional intensity of words occurring in the vicinity of “depression” and “anxiety”. Two text corpora were analysed, one academic (same as the one used in Vylomova et al., 2019) and one general, containing diverse text sources from the United

States of America from 1970 – 2018. The average intensity of words neighbouring these two words increased rather than decreased, as the vertical creep hypothesis proposed. However, this finding appeared to be due in part to the growing co-occurrence of the two concepts, which are both high in emotional intensity. Xiao and colleagues also found that the words “disorder” and “symptoms” become more associated with “depression” and “anxiety” over time, suggesting that these concepts are increasingly associated with pathology. While the study found mixed evidence of vertical creep in the period of 1970 to 2018, it supported the predicted pathologisation of these two concepts.

While the previously mentioned studies examined historical variations in the concept of mental disorder in text, concept creep can also be examined using experimental studies of individual participants. Levari et al. (2018) conducted a series of seven studies to examine “prevalence-induced concept change” across diverse concepts ranging from simple (i.e., the colour of dots) to complex (i.e., the ethical properties of research proposals). *Prevalence-induced concept change* (PICC) refers to the expansion of concepts or lowering of the threshold for identifying instances of the concept, as the prevalence of those instances declines. In each study, participants were asked to judge whether a series of stimuli were examples of the concept in question. After participants had made 200 or more judgements, the prevalence of instances of the concept would diminish. Across the seven studies, participants responded to the decrease in the prevalence of a stimulus by expanding their concept. The effect persisted even when participants were warned and incentivised to resist it.

Speerforck et al. (2024) examined the PICC effect on the concept of mental disorder. They employed a similar methodology to Levari et al. (2018) but used brief statements describing either obvious examples of healthy behaviours, obvious symptoms of mental

disorder, or ambiguous circumstances, as stimuli. In the condition where the proportion of statements about obvious mental disorder symptoms was reduced, participants became more likely to judge statements as disordered. These experimental studies illustrated that decreased prevalences could induce conceptual changes.

### **Concept Breadth**

As discussed in the Lay Conceptualisations Section, laypeople's definitions of mental disorder are subject to individual and cross-cultural differences. Since concepts like mental disorder are changing, it is possible that the uptake of these conceptual changes happens at different rates for different groups and individuals. Inspired by concept creep research on the historical expansion of concepts, individual and cultural differences in the expansiveness of these concepts can also be assessed and studied cross-sectionally. *Concept breadth* can be defined as the expansiveness of a person or culture's concept of mental disorder, from narrow to very inclusive. In this context, investigating individual differences in concept breadth within the population, could aid in understanding the implications of concept creep on individuals and groups, and potentially explain certain group differences in mental health attitudes and behaviours.

### ***Individual Differences in Concept Breadth***

Existing research on the conditions people judge to be mental disorders (see Lay Conceptualisations Section) makes it difficult to assess individual differences in the breadth of concepts of disorder. This is partly due to variations in study methodology and in the conditions examined in individual studies. Some studies use label-only questions to avoid researchers' bias in descriptions, while others prefer label-free vignette descriptions to minimise preconceptions or stigma about more well-known conditions. Among the studies that utilise vignettes, most concentrate on a handful of well-known disorders (e.g.,

schizophrenia, depression, and anxiety) instead of covering the diverse range of conditions recognised by official classifications. Even for the same condition, descriptions often differ across studies, making comparisons challenging.

Systematic studies of individual differences in the breadth of mental disorder concepts are lacking, but several studies of the breadth of other harm-related concepts have been conducted, inspired by concept creep theory. Across two studies, McGrath et al. (2019) found that individual differences in the breadth of several harm concepts could be measured reliably. In their first study, people who had broader concepts of harm tended to be politically liberal, have high empathic concern, be sensitive to injustice to others, and endorse harm-based morality. Additionally, in the second study, having broader harm concepts was related to feeling more personally vulnerable and entitled, and weakly related to being young. The two studies also revealed a general tendency for concept breadth to be moderately consistent across varied harm concepts. This finding makes it plausible that McGrath et al.'s (2019) findings would be generalised to the breadth of the concept of mental disorder.

Indeed, these earlier findings were substantially replicated in a subsequent series of studies conducted to develop the Harm Concept Breadth Scale (HCBS; McGrath & Haslam, 2020). The HCBS assesses individual differences in the expansiveness of harm concepts, specifically mental disorder, bullying, prejudice, and trauma; each concept having its own subscale. McGrath and Haslam (2020) found that people scoring higher on the HCBS were more likely to be female, to be politically liberal, to have higher negative emotionality on the Big Five personality factors, and to endorse harm-based morality. Using a different measure and examining a more specific disorder concept, Ahuvia et al. (2023) found another promising set of correlates of individual differences in concept breadth. Compared to

adolescents who saw fewer symptoms as indicative of depression (i.e., a narrow concept of depression), those who saw more symptoms as indicative had more severe depression symptoms, felt more hopelessness, perceived depression to be more permanent, and were more likely to see medication, but not therapy, as helpful.

These studies, albeit not precisely measuring the breadth of the general concept of mental disorder or differentiating between vertical and horizontal forms of concept breadth, demonstrate an approach to measuring individual differences in this domain and to shedding light on their predictors, correlates, and outcomes. It appears likely that individual differences in the breadth of the concept of mental disorder exist and can be reliably measured. It remains to be determined whether these differences are associated with consequential phenomena and potentially advance the understanding of the implications of concept creep. In view of the potential importance of individual and cultural differences in how mental disorder is conceptualised, it is crucial to develop valid and reliable measures of these differences and to examine the implications of concept breadth in all its complexity.

### ***Cultural Differences in Concept Breadth***

The concept of mental disorder is partly socially constructed, so individuals' concepts are embedded in their cultural surroundings and beliefs (U.S. Department of Health and Human Services, 2001). Neglect of cultural differences and considerations has been identified as one of the shortcomings of the *DSM* (e.g., Wakefield, 1992), as its formation and evidence draw heavily on Westernised perspectives and populations, particularly from the United States of America. Empirical evidence also supports the existence of ethnic and cultural differences in various mental health variables, such as mental health literacy (e.g., Jorm, Nakane, et al., 2005), stigma (e.g., Krendl & Pescosolido, 2020; Misra et al., 2021), and help-seeking (e.g., Abe-Kim et al., 2007; Masuda & Boone, 2011).

Cultural beliefs have been studied with various theoretical and methodological approaches, such as in studies of culture-bound syndromes (e.g., Simons & Hughes, 1985), cultural explanatory models (e.g., Weiss et al., 1992), and idioms of distress (e.g., Nichter, 1981). Many of these studies utilised qualitative approach and focused on comparing concepts or beliefs about specific disorders, for example, showing cross-cultural and cross-country differences in the concepts of depression (e.g., Lawrence et al., 2006) and schizophrenia (e.g., Olafsdottir & Pescosolido, 2011). These qualitative studies on culture-bound syndromes and idioms of distress are useful in illustrating that different concepts of disorder exist across cultures. It is possible that different cultures have completely different ideas about what disorder is and equally possible that different cultures share similar prototypes of mental illness but differ in the range of phenomena around these prototypes that are considered to be disordered. None of these qualitative findings suggest whether the concept of mental disorder as a whole is quantitatively similar or different across cultures. In theory, concepts of disorder are likely to differ in their expansiveness across cultures but the paucity of research on the topic makes it impossible to make strong predictions about these differences. However, very few studies have conducted direct quantitative comparisons on the general concept of mental disorder across cultures or countries.

Only three studies have examined cultural differences in the breadth of concepts of mental disorder as a whole. The first two studies, one of which was described earlier in Lay Conceptualisation section, measured concept breadth with a subset of 68 vignettes developed to describe people's experiences. These vignettes include 47 *DSM-IV* disorders and 21 conditions that were not *DSM-IV* disorders but circumstances that are close to the boundary of psychopathology. To understand the cross-cultural variations in the concepts of mental disorder, Giosan et al. (2001) surveyed undergraduate students from Brazil, Romania,



and the United States of America with a similar methodology as in Haslam and Giosan's (2002) study. By analysing the proportion of conditions that participants judged to be disorders, they found that American students had the broadest concept of mental disorder, followed by Romanians and lastly Brazilians. Specifically, fewer than one-third of all conditions and of the official disorders were considered as disorders by Brazilians. The subsequent analysis also revealed four features that were common to the concepts of mental disorder in all three countries, namely, flawed character, incomprehensibility, irrationality, and statistical abnormality, yet each culture emphasised different features.

Similarly, Glovsky and Haslam (2003) investigated cultural differences in concept breadth from an acculturation perspective. Forty-three Brazilian citizens living in the United States of America completed an acculturation scale, judged whether or not 27 conditions (mostly from the 68-vignette set) were mental disorders and rated their agreement to 12 items about potential features of mental disorder. Findings showed higher levels of acculturation were associated with judging more conditions as disorders and having a concept that emphasised intrapsychic features (American view) more than externalist (Brazilian view) features, which is mostly consistent with the predictions that acculturation influenced people's concepts of mental disorder in terms of breadth and defining features. The study found no associations between acculturation and correspondence to *DSM-IV* concepts.

Two decades later, Tse and Haslam (2021) created 10 new vignettes based on *DSM-5* disorders (APA, 2013) that have undergone horizontal or vertical creep to investigate cultural variations in concept breadth. They asked Asian and White Americans whether they thought each of the 10 people described in the ambiguous scenarios had a mental disorder. They found that White Americans had broader concepts of mental disorder than their Asian

counterparts. This difference also partially mediated an ethnic difference in help-seeking attitudes, according to which White Americans were more positively disposed to seeking professional help.

All three studies reviewed above support the notion that cultural differences exist in the breadth of the concepts of mental disorder and that the differences are related to other psychological variables. These studies extended on the cultural literature suggesting that the concept of mental disorder differs not only in what it meant in different cultures, but also on the concept's expansiveness. For example, it is possible that all cultures share the same central point of the concept yet differ in the directions of development and hence expansiveness; and equally possible that different cultures have completely different ideas of what disorder is and these ideas have little or no overlaps. However, the first two studies were conducted two decades ago and were based on *DSM-IV*, which was published in 1994. None of the measures of concept breadth distinguished between horizontal and vertical breadth; all assessing horizontal breadth only. Therefore, echoing the individual difference literature, more systematic measures capable of detecting cultural variations along both dimensions of concept breadth would be beneficial for understanding these disparities and uncovering potential correlates and underlying mechanisms.

The present research conceptualised culture as systems of beliefs and values that guides perceptions (e.g., Hofstede, 1984; Triandis & Gelfand, 1998), with a specific focus on those related to mental health and illness. The studies compared an ethnic minority group within a nation to investigate possible cultural differences in concept breadth. This operationalisation of culture does not capture the full complexity of culture (e.g., cultural identity, acculturation, culture-specific systems of symbols and meanings), but it provides a pragmatic starting point for investigating cross-cultural variation, particularly in Western

societies where cultural groups often retain distinctive beliefs and practices regarding mental health. In addition, some cultural orientation variables, such as individualism and collectivism, were measured to supplement this simplistic classification and to account for variations within racial groups. Particularly for underexplored new constructs like concept breadth, the current operationalisation of culture provided methodological feasibility to begin uncovering how cultural background may shape individuals' understanding of what constitutes a mental disorder. Systematically investigating whether and how concept breadth differs across cultural groups may help reveal a more nuanced and inclusive understanding of mental disorder, ultimately supporting more culturally sensitive approaches to mental health research, diagnosis, and intervention.

### **Associations Between Concepts of Mental Disorder and Mental Health-Related Variables**

How definitions and concepts of mental disorder relate to other mental health-related attitudes and behaviours is a fundamentally important question (Neff & Husaini, 1985). In the following subsections, key variables in mental health research, including mental health literacy, stigma, self-diagnosis, and help-seeking, are first discussed in general to provide context and then with relevance to the concept of mental disorder, with a particular focus on concept breadth.

#### ***Mental Health Literacy***

Jorm et al. (1997) introduced the concept of *mental health literacy*, mirroring health literacy for physical illnesses, and initially defined it as “knowledge and beliefs about mental disorders which aid their recognition, management or prevention” (p. 182). Jorm (2000, 2012) later refined the concept to further emphasise that the knowledge should link to actions in enhancing the mental health of oneself or others, specifying six components, namely the (1) ability to recognise disorders, (2) knowledge about risk factors and causes, (3)

self-help intervention, (4) available professional help, and (5) how to seek information, and (6) attitudes that facilitate recognition and help-seeking. Mental health literacy is measured by comparing an individual's knowledge about mental health conditions to current evidence-based views in Western psychiatry. Mental health literacy measures often consist of yes/no or multiple-choice questions about the diagnosis and treatment of mental health conditions, with one correct answer per question (e.g., Jung et al., 2016; Reavley et al., 2014).

A large quantity of research has been dedicated to uncovering predictors and correlates of mental health literacy. Broadly, being female (Furnham, Abajian, et al., 2011; Miles et al., 2020; Reavley et al., 2014; Vermaas et al., 2017), younger (Bernstein et al., 2020; Kaneko & Motohashi, 2007; Miles et al., 2020), having a higher level of education (Bernstein et al., 2020; Gorczynski et al., 2017; Kaneko & Motohashi, 2007; Reavley et al., 2014), more psychology or mental health training (Furnham & Sjobqvist, 2017; Miles et al., 2020; Vermaas et al., 2017), and previous experience of mental health issues (Furnham, Abajian, et al., 2011; Furnham & Sjobqvist, 2017; Miles et al., 2020; Reavley et al., 2014) have been found to predict higher mental health literacy. Mental health literacy is also associated with being empathic and emotionally intelligent (Furnham, Cook, et al., 2011; Furnham & Sjobqvist, 2017).

Various studies have shown benefits of higher mental health literacy by linking it to lower stigma, better identification of mental health disorders, greater willingness to disclose mental illness, enhanced ability to advise and assist others, more positive help-seeking attitudes, and higher treatment use and engagement (Bonabi et al., 2016; Cheng et al., 2018; Gorczynski et al., 2017; Kelly et al., 2007; Kitchener & Jorm, 2006; Moll et al., 2018). Therefore, interventions and training to boost mental health literacy at the societal and individual levels are popular in developed countries. For example, in Australia, alarming data

drawn from the first few surveys on mental health literacy prompted governmental efforts to educate the public, as reflected in governmental policy documents (e.g., Commonwealth Department of Health Aged Care, 2000; Commonwealth Department of Health and Aged Care, 2000). Subsequently, within a 16-year period between the first (1995) and third (2011) national Australian surveys, recognition of disorders (schizophrenia and depression) and perceived usefulness of various interventions had improved (Highet et al., 2006; Jorm, Christensen, et al., 2005). These effects were at least partly attributed to public campaigns like The National Depression Initiative by Beyond Blue (Christensen et al., 2004; Kitchener & Jorm, 2006), as well as individual training such as the Mental Health First Aid training (Christensen et al., 2004; Kitchener & Jorm, 2006).

Indeed, campaigns and individual training programs have continued to be effective and popular methods in increasing mental health literacy (Kelly et al., 2007). For instance, a meta-analysis of 18 trials of Mental Health First Aid training showed small to moderate effects on reducing stigma, and improving mental health knowledge, recognition of mental disorders, confidence in and intentions to help others with mental health issues, and belief about effectiveness of treatment immediately and 6-month post-training (Morgan, Ross, et al., 2018). The effects on help-seeking behaviours were more inconsistent, but generally, mental health literacy did not associate with or encourage help-seeking behaviours (Gorczynski et al., 2020; Moll et al., 2018; Tay et al., 2018). While the short-term benefits of improving mental health literacy are relatively clear, reviews and meta-analyses repeatedly find that the sustainability of effects has not been established and is often not tested (Ma et al., 2023; Reis et al., 2022). This may explain why gains in mental health literacy have not translated into increases in later help-seeking behaviours. Evidently, there is still a need for

research on factors that may enhance the sustainability of mental health literacy interventions.

How mental health literacy is related to individuals' concepts of mental disorder, and specifically concept breadth, is an unresolved question. On the surface, mental health literacy seems to be a similar construct to concept breadth. Both constructs may be measured using vignette-based judgments of whether certain experiences or behaviours qualify for a disorder label. However, there are two theoretical and empirical differences between them. First, since mental health literacy is about factual mental health knowledge, it would be expected to correlate with general knowledge and education levels. Many studies have provided empirical evidence to support this association (e.g., Bernstein et al., 2020; Reavley et al., 2014). In contrast, since concept breadth is not a matter of accuracy, it may or may not align with factual knowledge. Consequently, although both constructs can be measured using vignette judgments, mental health literacy relates to correct identifications of a disorder, whereas concept breadth relates to any identification of a disorder, whether correct or not. Second, mental health literacy is linked to Western psychiatry, the benchmark against which literacy is defined, whereas concept breadth is not. Although the DSM acknowledges cultural syndromes, it is not informed by cultural theories (Kermode, Bowen, Arole, Joag, et al., 2009; Kermode, Bowen, Arole, Pathare, et al., 2009). Moreover, studies have shown that mental health literacy failed to explain ethnic disparities in help-seeking (Furnham & Hamid, 2014), yet concept breadth did (Tse & Haslam, 2021). Concept breadth is a subjective conceptualisation of what is a mental disorder to an individual or a group, which may or may not align with Western psychiatry, and is therefore a more promising construct for examining cultural differences. A person could accurately recognise symptoms of a mental disorder, indicating they are mental health literate, but not

personally believe such a condition is a mental disorder in their cultural framework.

Although concept breadth and mental health literacy are theoretically distinct constructs, the exact relationship between the constructs remains a crucial empirical question to be explored.

### ***Stigma***

Goffman's influential book on stigma in 1963 defined it as a situation where a person's identity is discredited (Goffman, 2009). Since then, his sociological perspective on stigma has set the foundation of stigma research. However, despite decades of effort and a huge body of research, conceptualisations and terminologies remain highly divergent (Link & Phelan, 2001; Pescosolido & Martin, 2015; Phelan et al., 2008). The construct of stigma has been heavily criticised in the literature for its variability and inconsistency in terminology (Link & Phelan, 2001; Link et al., 2004), where there are "different terms to describe the same stigma concepts and the same terms to refer to different constructs" (Fox et al., 2018, p. 351). This is possibly due to the complexity of the concept itself, as well as the fact that it has been approached from multiple disciplinary perspectives (Link & Phelan, 2001). Stigma manifests at multiple levels – individual, societal, and systemic – and can be examined from the standpoint of stigmatised people and the general public. It can also have different targets: stigma towards people with mental disorder and towards help-seeking (Tucker et al., 2013). This complexity results in numerous, sometimes overlapping, types of stigma (e.g., explicit, implicit, perceived public, social, personal, internalised, and self-stigma) and a proliferation of measures (Tucker et al., 2013). One of the more commonly used distinctions in types of stigma is between public stigma (when the general public endorses prejudices about people with mental disorders) and self-stigma (when individuals with mental disorders apply these public prejudices to themselves).

Most conceptualisations of stigma comprise all or some of these three elements: stereotype, prejudice, and discrimination. Stereotype is the cognitive component of stigma, referring to the collective beliefs about the characteristics and behaviours of a group of individuals (Corrigan et al., 2001). Some prevailing stereotypes of people with mental disorder are that they are violent and dangerous (Link et al., 1987; Nunnally, 1961; Penn et al., 1994). In general, stereotypes surrounding mental disorder are overly negative. For instance, when asking 14-year-olds “What sort of words or phrases might you use to describe someone who experiences mental health problems?” (Rose et al., 2007, p. 2), all five themes (popular derogatory terms, negative emotional state, physical illness or learning disability, psychiatric categories, violence, and loneliness) that emerged from the 250 unique responses have negative connotations (Rose et al., 2007). Prejudice is the affective component of stigma, representing the emotional reactions that one has towards a group or a member of the group (Corrigan et al., 2001). Common emotions experienced towards people with mental disorders are fear, pity, and anger (Corrigan & Kleinlein, 2005; Corrigan et al., 2004). Discrimination is the behavioural component, where prejudice is being acted upon, leading to unfair behaviours towards people with mental disorders (Allport, 1954; Brewer, 2007). Four types of discrimination are commonly found towards people with mental disorders: avoidance, withholding help, segregation, and coercion (Corrigan & Rüsch, 2002; Corrigan & Watson, 2002). These components are discussed in various theories underlying the field of stigma research.

One of the most influential theories in stigma research is the modified labelling theory (Link et al., 1989), which refers to the process where individuals internalise the perceived reaction of society to those with mental disorders. It relies on two central components: devaluation and discrimination. Individuals believe that people with mental



disorder will be devalued, and hence, be discriminated against. Once an individual has been labelled, these societal perceptions become personally relevant. The individual may then respond in three possible ways: secrecy, withdrawal, or education. This labelling process has negative consequences, affecting self-esteem, employment opportunities, and social interactions, which may increase the severity of their disorders.

In supporting the development of this theory, a prior study by Link et al. (1987) created two scales measuring perceived dangerousness of and desired social distance from people with mental disorder, and modified versions of these scales remain widely used to this day. Many studies have found that perceived dangerousness is positively associated with desired social distance, with moderate to strong correlations (e.g., Horch & Hodgins, 2008; Marie & Miles, 2008; Siltan et al., 2011). People stereotypically believe that people with mental disorder are dangerous, and hence, behaviourally discriminate against them by seeking social distance (Link & Phelan, 2001). These two proxies, therefore, are integral to ongoing stigma research.

With a long line of research, some factors have been found to be associated with stigma. For instance, being female, younger, white, more educated, attending religious services, and having more personal contact with people with mental disorder were associated with relatively lower levels of stigma (Alexander & Link, 2003; Eisenberg et al., 2009; Siltan et al., 2011). For instance, more personal contact with people with mental disorder was associated with lower perceived dangerousness and desired social distance (Alexander & Link, 2003).

From the target's perspective, experiencing stigma, regardless of public or self-stigma, commonly brings many adverse consequences. Countless studies have linked perceptions or experience of public stigma to lower self-esteem, decreased self-

determination, diminished quality of life, reduced treatment adherence, loss of job opportunities, social isolation, and segregation (Corrigan & Shapiro, 2010; Kao et al., 2016; Link et al., 1989; Sirey et al., 2001; Thornicroft et al., 2009). More specifically, when an individual experiencing a mental disorder internalises these public negative attitudes towards them, they develop self-stigma (Corrigan, 2004). A meta-analysis of 52 studies revealed that a higher level of self-stigma consistently led to lower empowerment, hopeful feelings, personal functioning, quality of life, self-esteem, subjective recovery, and stigma resistance, and higher depressive symptoms, experienced public stigma, and perceived public stigma (Del Rosal et al., 2021). These adverse effects prompted the need to address both public and self-stigma through effective interventions to mitigate the impacts of stigma on individuals' lives and wellbeing.

To combat the detrimental consequences of stigma, many anti-stigma interventions have been attempted. Several meta-analyses yield broadly consistent results that contact and educational interventions are effective in reducing stigma; however, these effects are small to medium and generally do not sustain long-term at follow-up (Corrigan et al., 2015; Corrigan et al., 2012; Griffiths et al., 2014; Maunder & White, 2019; Morgan, Reavley, et al., 2018). The mechanisms of successful stigma reduction remain relatively unknown (Na et al., 2022).

Apart from intentional efforts to reduce stigma, it is equally important to observe the historical changes in stigma over time. To this end, there have been inconsistent trends (Angermeyer & Dietrich, 2006). Phelan et al. (2000) compared data collected from interviews in 1952 and 1996 that asked people to describe what mental illness is. They found that people who described it with reference to psychosis were more likely to associate it with violence at both time points, and this association more than doubled over time.

However, at the same time, amongst those who described non-psychotic conditions, the percentage of people mentioning violence decreased. Similarly, Swindle et al. (2000) found evidence of a reduction of stigma for “nervous breakdown” over a similar 40-year period. Although cultural differences might be at play, the comparison between 1990 and 2001 data in West Germany found that the desired social distance towards people with depression was mostly unchanged (Angermeyer & Matschinger, 2004). Continuing the comparison with the GSS data from 1996, 2006, and 2018, Pescosolido et al. (2021) found inconsistent patterns of change across three disorders (alcohol dependence, depression, and schizophrenia). Only public stigma (in terms of social distance) for depression significantly decreased, whereas stigma for alcohol dependence (in terms of attributions of bad character) and schizophrenia (in terms of perceived dangerousness) showed significant increases. It is evident that the changes in stigma differ between the types of disorders. Overall, the stigma towards depression decreased or remained stable, whereas the stigma towards schizophrenia and alcoholism increased.

The finding that changes in stigma differ by disorders indicates that the concept of mental disorder is not only relevant, but potentially intertwined with the changes in the level of stigma over the years. Stigma is thought to manifest differently for different disorders (Angermeyer & Dietrich, 2006; Fox et al., 2018; Schomerus et al., 2011; Siltan et al., 2011). Traditionally, psychotic disorders, most notably schizophrenia, are heavily stigmatised because of their assumed relationship with violence and danger (Siltan et al., 2011). In contrast, mood and anxiety disorders, such as major depressive disorder and anxiety, are less stigmatised as they are regarded as more understandable and not confronting (Feldman & Crandall, 2007). Supporting the idea that changing concepts of mental disorder are relevant to shifts in stigma, Phelan et al. (2000) concluded that, without

the broadening of mental disorder definitions between 1952 and 1996 to include non-psychotic conditions, stigmatised perceptions associating mental disorder with violence would have increased even further.

Some findings from previous studies provide insights into the relationship between concept breadth and stigma. Granello and Granello (2000) surveyed 102 university students who were primarily female and Caucasian. Participants completed the Community Attitudes Toward the Mental-Ill questionnaire (CAMI; Taylor & Dear, 1981) including four subscales, namely authoritarianism (perception of people with mental illnesses being an inferior group that requires compulsory measures), social restrictiveness (perception that people with mental illnesses are threats to the society), benevolence (perception that sympathy and humanistic approach should be employed to take care of people with mental illnesses), and mental health ideology (perception on the best form of care for people with mental illnesses and the community). Participants also judged whether each of the eight descriptions (antisocial personality disorder, bulimia nervosa, panic disorder with agoraphobia, psychotic disorder, adjustment disorder with depressed mood, attention-deficit hyperactivity disorder [ADHD], posttraumatic stress disorder [PTSD], and substance abuse disorder) represented a mental illness. The majority of the participants agreed that only the first four conditions were illnesses. Having a broader definition of mental illness was significantly correlated with lower levels of authoritarianism and social restrictiveness, and a higher level of benevolence. Participants' breadth of concept had no correlation with their mental health ideology. Granello and Granello (2000) concluded that continued education on the scope and nature of mental illness would be the right direction to increase tolerance towards people with mental illness.

In contrast, Rusch et al. (2012) asked English participants to judge whether each of the six labels (i.e., schizophrenia, bipolar disorder, depression, drug addiction, stress, and grief) was a type of mental illness and concluded that a broader view of mental illness was associated with more negative attitudes and disclosure. This finding is puzzling, as negative attitudes and disclosure are commonly negatively correlated. However, this puzzle could be explained by how Rusch et al. (2012) denoted a broader view—more disagreement that major psychiatric disorders (i.e., schizophrenia, bipolar disorder, and depression) were mental illnesses and more agreement that the behavioural or stress-related conditions (i.e., drug addiction, stress, and grief) were mental illnesses. The latter indeed implies having a broad concept, whereas the former implies the opposite. These two studies therefore provide some preliminary support for associations between stigma and concepts of mental disorder. The nuances of these associations are yet to be investigated systematically. Understanding how people conceptualise mental disorder is potentially important for understanding stigma. Therefore, systematically exploring the relationship between these factors is a priority for future research.

### ***Self-Diagnosing Mental Disorder***

One highly plausible consequence of expanding concept breadth is a rising tendency for people to diagnose themselves with a mental disorder. Self-diagnosis is defined as individuals diagnosing themselves without the help of a professional (Fellowes, 2023; Moses, 2009; Thoits, 2016). Traditionally, self-diagnosis has been studied in the context of cyberchondria, which is the escalated concerns of one's health and subsequently diagnosing oneself by gathering health information online (White & Horvitz, 2009). This context highlights the vital role the Internet can play in self-diagnosis. While self-diagnosis in many ways is not a new phenomenon, it has certainly intensified with the help of the Internet;

initially in the form of online user-led self-help forums or communities (Giles & Newbold, 2011), and more recently, on social media platforms (Haltigan et al., 2023; Kim et al., 2020), such as TikTok and Instagram. TikTok, in particular, has been under scrutiny for contributing to the spread of symptoms of mental disorders. The rise in self-diagnoses of certain disorders, such as Tourette's Syndrome (TS), has been documented as a consequence of popular TikTok content creators self-proclaiming to have the condition (Frey et al., 2022; Zea Vera et al., 2022). Gilmore et al. (2022) also established a link between self-diagnosing ADHD and watching TikTok videos by qualitatively analysing individuals' Twitter posts discussing their self-diagnosing experiences. This prevailing self-diagnosis trend has emerged as a phenomenon that necessitates a comprehensive understanding to inform potential interventions.

There are both risks and benefits associated with self-diagnosis. In a positive vein, self-diagnosis is the first step to seeking help in many help-seeking models (e.g., McLaren et al., 2023). Self-diagnosis suggests an awareness of one's mental health and could prompt subsequent appropriate actions, such as drawing on social support from friends and family or seeking formal psychiatric help. One can only decide to seek help for a mental health problem after one acknowledges its existence (Featherstone & Broadhurst, 2003). Self-diagnosis may also benefit people who do not have ready access to professionals. It has been shown that self-diagnosis often precedes formal diagnosis. For example, some adults reported self-diagnosing 3.25 years before receiving a formal diagnosis (Lewis, 2016), underscoring the significant delays often experienced in accessing professional help. While self-diagnosis may not substitute a formal evaluation, it can foster awareness of one's mental health, motivate individuals to seek relevant information and support, and engage in self-care. In this regard, self-diagnosis may facilitate relatively early monitoring and

management of one's mental health during the interim period before professional help becomes accessible.

On the negative side, self-diagnosis likely increases the risk of over-diagnosis, misdiagnosis, engaging in unsuitable or even harmful self-treatment, distrust in professionals, and unrealistic expectations of treatment (Chen & Turner, 2010; Fergus & Dolan, 2014; Holyoake & Searle, 2015; Robertson et al., 2021). Holding an inaccurate self-diagnosis and corresponding treatment expectations prior to seeking professional help may lead to disagreements with professionals' diagnoses and foster distrust in their expertise. This breakdown in trust and agreement in turn may negatively affect the individual's willingness to follow the treatment plan, leading to worse mental health outcomes. There is also a substantial literature dedicated to how self-labelling may induce self-stigma (e.g., Link et al., 1989). Unwarranted self-diagnosis may create unnecessary anxiety and exacerbate further distress from self-stigma, and ultimately affect mental wellbeing. Indeed, a longitudinal study with up to 24-month follow-up assessment on youth self-labelling indicated that even when controlling for mental health symptoms and treatment usage, developing a self-labelled diagnosis was associated with a decrease in self-esteem over time (Harari et al., 2023). Most laypeople have limited mental health knowledge, which may lead them to misinterpreting ordinary experiences of distress as mental disorders, with potentially adverse downstream implications.

The creation of algorithmic social media platforms facilitates self-diagnosis and intensify these associated benefits and risks. Algorithms are optimised to deliver confirmatory points of view, rather than opposing voices (Bishqemi & Crowley, 2022). Because they prioritise user-interested content, these algorithms can channel misinformation towards people who show an initial interest in it. On the one hand, people

who would otherwise be socially isolated can increasingly find comfort in diagnosis-based communities and online subcultures (Harness & Getzen, 2022). These subcultures are often created and fostered by content creators who claim to have these disorders. On the other hand, social media platforms intensify the risk of unwarranted self-labelling by allowing everyone, regardless of their professional qualifications, to share mental health information with little or no accountability or regulation. This issue is especially concerning for adolescents and young people, who are the primary demographic of these platforms. At this key developmental stage for emotional regulation and critical thinking (Orben et al., 2022; Twenge, 2020), they are highly susceptible to online misinformation (Basch et al., 2022; Frey et al., 2022) and thereby particularly vulnerable to the self-diagnosis trend.

The existing literature on self-diagnosis lags behind the escalating social trend. There is an urgent need to understand the phenomenon. The majority of the literature on self-diagnosis concentrates on physical illnesses, and the remaining small proportion on mental illnesses focuses only on the experiences or consequences of self-diagnosis (e.g., Giles & Newbold, 2011; Lewis, 2016; Valente et al., 2020) instead of factors that contribute to individuals' tendency to self-diagnose. The very few studies (e.g., Deo & Lymburner, 2011; Hardy & Calhoun, 1997) that allude to factors contributing to self-diagnosis often focus on psychology student syndrome (PSS), a phenomenon in which psychology students diagnose themselves with mental disorders they are learning about (Deo & Lymburner, 2011).

Although evidence for PSS is inconsistent (Ahmed & Samuel, 2017; Deo & Lymburner, 2011), a few antecedents for psychology students' tendency to self-diagnose have been found. These include having clinical experiences (either from education or personal connections), prior adverse life events, and knowledge about mental disorders from sources outside of academic settings (Ahmed & Samuel, 2017). In addition, high trait levels of neuroticism are



associated with higher personal concerns about having mental disorders (Deo & Lymburner, 2011). There has yet been no investigation of whether the expansiveness of people's concepts of mental disorder contributes to their tendency to self-diagnose. People with broader concepts would be expected to be more likely to diagnose themselves because they would see a wider and milder range of phenomena as indicative of disorder. Investigating the role of concept breadth in self-diagnosis is therefore a promising direction for future research.

### ***Help-Seeking***

Help-seeking is a major outcome variable in mental health research. It refers to a coping process where individuals seek assistance with concerns about their mental health (Rickwood & Thomas, 2012). Individuals can seek help from various sources, and these can be broadly categorised as formal and informal sources. The former refers to professional sources such as general practitioners, psychologists, and psychiatrists, whereas the latter refers to social sources such as friends, parents, and family (Rickwood et al., 2005). Clinical attention and treatment are usually the consequences following formal rather than informal sources of help-seeking, and therefore, the literature concentrates on formal help-seeking, which is also the focus of this thesis.

Help-seeking, particularly from formal sources, has often been conceptualised as a positive outcome leading to correct diagnosis and appropriate treatment, which should enhance the help seeker's mental health. Although timely formal help-seeking is ideal, delays in receiving treatment are common and detrimental (Thompson et al., 2012). A large-scale study in 15 countries found that the delay between symptoms appearing and the beginning of treatment ranged from 3 to 30 years, 1 to 14 years, and 6 to 18 years for anxiety, mood, and substance use disorders, respectively (Wang et al., 2007). Longer delay of

treatment has been shown to be associated with poorer courses of disorder, treatment outcomes, and quality of life (Altamura, Dell'osso, D'Urso, et al., 2008; Altamura, Dell'osso, Vismara, et al., 2008; Marshall et al., 2005). However, excessive or inappropriate help-seeking may also be problematic. This can lead to the over-utilisation of services by people who do not need them, potentially delaying treatment for those who do. Public resources may not be utilised optimally for the most disadvantaged group if less severely impaired people seek unnecessary treatment.

Many conceptual models attempt to illustrate the antecedents and processes of help-seeking (e.g., Biddle et al., 2007; Goldberg & Huxley, 2012; McLaren et al., 2023). Featherstone and Broadhurst (2003) summarised these models into three stages: 1) appraising the problem; 2) deciding to seek help; and 3) actively seeking help. Therefore, help-seeking is often studied in one or more of these three sequential components – attitudes, willingness or intention, and behaviours. Studies have shown interrelationships between these various components of help-seeking (e.g., Chandrasekara, 2016; Kosyluk et al., 2021; Mojtabai et al., 2016; Pearson & Hyde, 2020; Schomerus, Stolzenburg, et al., 2019; Tomczyk et al., 2020). While relationships between attitudes and willingness or intention, and between willingness or intention and actual behaviours, are found to be inconsistent (e.g., Chin et al., 2015; Pearson & Hyde, 2020; Schomerus, Stolzenburg, et al., 2019), the predictive relationship between help-seeking attitudes and behaviours of actual service use has been the most consistent. For instance, a large-scale survey across six European countries (Belgium, France, Germany, Italy, the Netherlands, and Spain) indicated that more positive attitudes toward help-seeking were associated with greater actual service use (ten Have et al., 2010).

Countless cross-sectional studies have set out to explore associations of demographic and psychological variables with help-seeking. Demographic predictors, such as being female, younger, Caucasian, having a higher income and level of education, and majoring in psychology, were linked to more positive attitudes and help-seeking behaviours (Chandrasekara, 2016; Cheng et al., 2018; Gellert et al., 2021; Rickwood et al., 2005; Roberts et al., 2018; ten Have et al., 2010). Higher familiarity with mental disorders, lower personal and public stigma, being prompted to seek help, and knowing someone who had sought help were associated with more positive attitudes toward seeking help; and lower personal stigma, knowing someone who had sought help, and positive attitudes were associated with stronger intentions to seek help (Eisenberg et al., 2009; Kosyluk et al., 2021; Vogel et al., 2007). A meta-analysis by Li et al. (2014) summed up these associations by analysing 18 studies with 6839 participants. The meta-analysis revealed that help-seeking attitudes and the anticipated value of utilising mental health services were associated with a higher intention to seek help. In contrast, adherence to Asian values, public stigma, and anticipated risk were negatively related to the intention to seek help. Reviews have identified some of these factors as enablers and barriers to help-seeking. Enablers include positive past experiences, social support, emotional competence, and encouragement from others; and barriers include fear of stigma, a preference for self-reliance, poor mental health literacy, and negative help-seeking attitudes (Gulliver et al., 2010; Rickwood et al., 2005).

Longitudinal studies have found support for these associations and for additional predictors. For instance, lower public stigma and more self-diagnosis predicted more positive attitudes to help-seeking a year later, controlling for baseline attitudes (Xu et al., 2016), while higher perceived need, mental health literacy, and positive attitudes predicted help-seeking

behaviours during the following six months, controlling for previous mental health service use (Bonabi et al., 2016).

Cultural differences have been a consistent finding in the help-seeking literature. Service under-utilisation is often observed among ethnic minorities, while their White counterparts access these services at higher rates. In studies comparing Asian and White participants, not only did Asians utilise less formal mental health services, but they also tended to have less positive attitudes towards help-seeking and to terminate treatment prematurely (Leong & Chou, 1994; Matsuoka et al., 1997; Shea & Yeh, 2008; Zhang et al., 1998). The less positive outlook regarding help-seeking among Asians is potentially due to a combination of systemic and sociocultural factors (Shea & Yeh, 2008). At the system level, barriers include a shortage of culturally sensitive training and professionals and discrepancies between Asian values and Western psychiatry. At the individual level, factors such as language barriers, lack of knowledge about available services, differential preferences for coping styles, and a higher level of stigma also contributed to a lower rate of help-seeking (e.g., Komiya et al., 2000; Shea & Yeh, 2008). However, what leads to these ethnic and cultural differences in help-seeking remains unknown. For instance, stigma did not mediate the relationship between adherence to Asian values and less positive help-seeking attitudes (Shea & Yeh, 2008). It is possible that other unexplored factors may be responsible for these cultural differences in help-seeking.

Some initial evidence was provided by a study by Tse and Haslam (2021), which found that having broader concepts of mental disorder was associated with holding more positive help-seeking attitudes. Asian American participants had narrower concepts and less positive attitudes, and their narrower concepts relative to White American participants partially mediated the ethnic difference in attitudes. It is noteworthy that the concept

breadth measure used was preliminary and did not make a distinction between horizontal and vertical breadth, and associations between concept breadth and help-seeking behaviour (as distinct from attitudes) were not examined. Therefore, a more systematic investigation of the possible links between concept breadth and help-seeking attitudes and behaviours is warranted.

### **Research Overview**

The research presented in this thesis aims to 1) demonstrate systematic individual differences in the breadth of concepts of mental disorder; 2) reliably and validly measure these variations; 3) externally validate the scales and examine factors associated with cultural differences in concept breadth; and 4) investigate the psychological implications of holding broad concepts of mental disorder.

Eight studies were conducted to achieve these aims. Study 1 used a vignette design to characterise the expansiveness of the lay concept of mental disorders (concept extension) as well as the conceptual features associated with the concept (concept intension). Studies 2–5 developed and validated scales for assessing individual differences in the breadth of concepts of mental disorder. Studies 2 and 3 pilot-tested and refined item pools for measuring horizontal and vertical concept breadth and assessed their factor structures and internal consistencies. Study 4 tested the convergent and divergent validities of the new scales with an existing harm concept breadth scale and measures of mental health literacy, respectively. Study 5 further validated the scales by establishing their relationships with other mental health variables, such as previous contact, personal mental health experiences, stigma, and help-seeking attitudes and behaviours. Studies 6 and 7 employed the scales to investigate cultural variation in concept breadth. Finally, Study 8 examined the relationships among concept breadth, self-diagnosis, and help-seeking behaviours.

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## Chapter 2 (Study 1): What is a Mental Disorder? Evaluating the Lay Concept of Mental Ill Health in the United States<sup>1</sup>

### Abstract

#### Purpose

How “mental disorder” should be defined has been the focus of extensive theoretical and philosophical debate, but how the concept is understood by laypeople has received much less attention. The study aimed to examine the content (distinctive features and inclusiveness) of these concepts, their degree of correspondence to the *DSM-5* definition, and whether alternative concept labels (“mental disorder”, “mental illness”, “mental health problem”, “psychological issue”) have similar or different meanings.

#### Methods

We investigated concepts of mental disorder in a nationally representative sample of 600 U.S. residents. Subsets of participants made judgments about vignettes describing people with 37 *DSM-5* disorders and 24 non-*DSM* phenomena including neurological conditions, character flaws, bad habits, and culture-specific syndromes.

#### Results

Findings indicated that concepts of mental disorder were primarily based on judgments that a condition is associated with emotional distress and impairment, and that it is rare and aberrant. Disorder judgments were only weakly associated with the *DSM-5*: many *DSM-5* conditions were not judged to be disorders and many non-*DSM* conditions were so judged. “Mental disorder”, “mental illness”, and “mental health problem” were effectively identical

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<sup>1</sup> This chapter is presented in the exact format of a peer-reviewed published article. For the sake of consistency, the original referencing format from the published version has been retained. However, the numbering of studies, tables, and figures has been adjusted to align with the chronological order of presentation in this thesis.

in meaning, but “psychological issue” was somewhat more inclusive, capturing a broader range of conditions.

### **Conclusion**

These findings clarify important issues surrounding how laypeople conceptualize mental disorder. Our findings point to some significant points of disagreement between professional and public understandings of disorder, while also establishing that laypeople’s concepts of mental disorder are systematic and structured.

*Keywords:* DSM-5, lay concepts, concept breadth, mental disorder, mental illness, mental health problem, psychological issue

## Introduction

One of the most vexed questions in the mental health field is how to define mental disorder (Stein et al., 2021). This concept demarcates the conditions the field seeks to classify, understand, and treat. However, because these conditions are diverse and the boundary separating normality from pathology is fuzzy and unstable, it has been challenging to develop a definition that distinguishes which conditions should qualify as mental disorders and which should not. A clear definition would clarify the nature of mental disorder and adjudicate cases at the margins or at least help to clarify why some cases fall into a fuzzy boundary domain or are controversial.

A range of definitions of mental disorder has been put forward. Wakefield's (1992b) influential harmful dysfunction account proposes that a mental disorder involves harm, in the form of distress and/or impairment, that is due to the failure of a psychological mechanism to perform its evolved function. Several writers (e.g., Stein et al., 2021) have affirmed the centrality of harm to the concept, while others have challenged the dysfunction element of Wakefield's definition (e.g., Bolton, 2008). Some critics have proposed that no strict definition is workable because mental disorder is a prototype-based concept (Lilienfeld & Marino, 1999). More radical critics have argued that what we call mental disorder is in fact socially deviant behavior or ordinary problems in living rather than genuine medical illness (Szasz, 1960). *The Diagnostic and Statistical Manual of Mental Disorders (5<sup>th</sup> ed.; DSM-5)* (American Psychiatric Association, 2013) incorporates these concerns, defining a mental disorder as "a syndrome characterized by clinically significant disturbance in an individual's cognition, emotion regulation, or behavior that reflects a dysfunction in the psychological, biological, or developmental processes underlying mental functioning". This definition also specifies that social deviance or conflicts with society are

not mental disorders unless they “result[] from a dysfunction in the individual” (p. 20) (American Psychiatric Association, 2013, p. 20).

In addition to debating how mental disorder should be defined in the abstract, some authors have expressed concerns about how the concept is embodied in existing psychiatric classifications. These concerns focus on the *extensional* definition of mental disorder – the range of phenomena falling within it (e.g., the complete listing of recognized disorders), rather than on the necessary or sufficient conditions proposed by the *intensional* definition. A common critique in this work is that recent psychiatric classifications have become more expansive, either by including new disorders or by loosening the criteria for diagnosing existing disorders (e.g., Frances, 2013a; Horwitz & Wakefield, 2007). This broadening process, variously referred to as medicalization, pathologization, disease-mongering, psychiatrization, concept creep, or diagnostic inflation (e.g., Beeker et al., 2021; Brinkmann, 2016; Conrad & Slodden, 2013; Haslam, 2016), may have implications for overdiagnosis and overtreatment.

Given the theoretical and practical importance, and the longstanding debates about the definition of mental disorder, it is surprising that relatively little research has systematically addressed how the public understands the concept (Bolton, 2010; Jaspers, 1997). There are extensive literatures in psychology, sociology, and anthropology on how specific mental health conditions are understood – often conceptualized in terms of idioms of distress (Nichter, 1981), explanatory models of illness (Kleinman, 1980), lay theories (Furnham & Chan, 2004), or folk psychiatry (Haslam, 2005) – but very few studies have explored how the generic concept of mental disorder is defined (intensional definition) or the range of conditions that exemplify it (extensional definition).

How lay concepts of mental disorder align with or depart from professional concepts is a potentially fruitful line of inquiry, which could clarify important questions. For example, if laypeople understand mental disorder in terms of social deviance or abnormality rather than harm and dysfunction, this may help to make sense of the public stigma associated with it. Similarly, if laypeople's concept of disorder is narrower than the concept embodied in psychiatric classifications, their reluctance to acknowledge the importance of some conditions, or to seek help for them, might be clarified. Cultural and demographic variability in mental health-related behaviors might also be understood better if different cultures and demographic groups were shown to hold concepts of mental disorder that differ in content or inclusiveness.

Some prior research has addressed these questions. Haslam and Giosan (2002) conducted a small study in which American undergraduates judged whether 68 vignettes – 47 describing *DSM-IV* (American Psychiatric Association, 1994) disorders and 21 describing conditions not recognized by *DSM-IV* – were mental disorders and rated a series of features that might predict those judgments. Participants tended to judge a narrower range of conditions to be disorders than the *DSM-IV* but *DSM-IV* conditions were much more likely to be seen as disorders than non-*DSM-IV* conditions, implying substantial alignment between lay and official concepts. Haslam and Giosan (2002) also showed that participants judged conditions to be mental disorder primarily based on their perceived degree of harm (distress, impairment, and dysfunction) and abnormality (rarity and peculiarity). Further work found cross-cultural variations in disorder concepts (Giosan et al., 2001; Glover & Haslam, 2003) and similar discrepancies in concepts of childhood disorders (Giummarra & Haslam, 2005). Together, these studies indicated that laypeople's concepts of mental disorder may not align well with those advanced by theorists or embodied in psychiatric

classifications such as the *DSM*. Lay concepts tended to be narrower than the *DSM* and varied across cultures. However, two decades had passed since these studies were conducted, during which *DSM* has been updated and lay concepts are likely to have evolved due to increased mental health awareness.

Some recent studies have continued to examine lay concepts of disorder. Rusch et al. (2012) asked a large sample of English adults to judge whether six conditions, presented as labels rather than vignettes, were “a type of mental illness” (p. 643). Large majorities of participants strongly or slightly agreed that depression, schizophrenia, and bipolar disorder were mental illnesses, but much smaller proportions agreed for drug addiction, grief, and stress. Tikkinen and colleagues (2019) conducted a similar study, asking a large Finnish sample, including laypeople, psychiatrists, physicians, and nurses, to judge whether 20 mental health-related states, identified by label only, were “diseases”. Laypeople had narrower concepts than the health professionals. For example, schizophrenia and depression were seen as diseases by all groups; grief and homosexuality were seen as diseases by none; and addictions and social anxiety disorder were seen as diseases by psychiatrists but not by laypeople. The Rusch et al. (2012) and Tikkinen et al. (2019) studies are valuable for addressing mental disorder-related judgments in large samples and for revealing differences between the judgments of laypeople and mental health professionals. However, both studies have limitations from the standpoint of characterizing lay concepts of disorder. First, they included only small samples of mental disorders, limiting the capacity to assess the extensional boundaries of the concept or its alignment with psychiatric classifications such as the *DSM*. Second, they did not explore the features participants used to make their disorder judgments, and therefore could not clarify the intensional content of the disorder concept. Third, by examining judgments of labels rather than vignette



descriptions, the judgments may partially reflect familiarity with diagnostic terms as much as disorder concepts. Finally, Tikkinen et al.'s (2019) use of "disease" terminology was generally considered outdated within psychiatry, and judgments of "disease" may not correspond to judgments of "mental disorder".

This issue of terminology raises questions for previous research, in which different studies have asked participants to judge whether conditions were mental "disorders", "illnesses", or "diseases". It is not yet known whether different terms such as these have different meanings for laypeople. In the present day, "mental disease" is rarely used, while "mental illness" is still current, although some writers object to its medical implications. "Mental disorder" was intended to be a more neutral substitute and less stigmatising than "mental illness" (Fountoulakis, 2022), but some people prefer expressions such as "mental health problem" that may have less severe connotations. These varied terms might have different levels of inclusiveness as well. "Mental illness" might refer to a narrower class of phenomena than "mental disorder" because its medical connotation might lead people to use it only in reference to conditions believed to have primarily biogenetic causes. "Mental health problem", as a normalizing term, might be understood to refer to a broader and less severe range of phenomena than "mental illness" or "mental disorder". Terms such as "psychological issue", which lacks any direct implication of pathology or disturbance, may even be more inclusive. Determining whether laypeople ascribe similar or different meanings to alternative terms such as these is an important research question.

Building on this previous work, the present study aims to investigate multiple aspects of laypeople's mental disorder-related concepts. Using a vignette-based methodology with a large U.S. nationally representative sample, it examines three fundamental research questions. First, it explores whether alternative generic terms ("mental disorder", "mental

illness”, “mental health problem”, and “psychological issue”) have similar or different meanings, both in which conditions are judged to best exemplify them and in the breadth of the respective concepts (i.e., the extension or range of conditions they include). Second, the study examines how well laypeople’s mental disorder-related concepts correspond to *DSM-5*, the currently dominant psychiatric classification. Third, it examines the intensional content of these concepts: the perceived features of psychological conditions that predict disorder judgments. The study is primarily descriptive and exploratory in nature, without explicit hypotheses. We anticipate that there would be differences in the meanings of the respective terms, that mental disorder-related concepts would show only a moderate alignment with the *DSM-5*, and that, as in previous studies (e.g., Haslam & Giosan, 2002), harm and abnormality judgments would predict which conditions are judged to be mental disorders.

## **Method**

### **Participants**

A U.S. nationally representative sample (stratified across age, sex, and ethnicity) of 623 participants was recruited from Prolific. Twenty-three participants (3.69%) were excluded due to incomplete responses, failing two or more of the three attention check questions (Goodman et al., 2013), a completion time of less than 8 minutes (Zhang & Conrad, 2014), and/or straight-line responses. The final sample of 600 participants aged between 18 to 92 ( $M = 44.45$ ,  $SD = 16.16$ ) and contained 299 women, 291 men, eight non-binary people, and two who preferred not to say. It included 448 White Americans (74.7%), 81 Black or African Americans (13.5%), 45 Asian Americans (7.5%), and 26 others (4.3%).

### **Materials**

#### ***Vignettes***

Sixty-one vignettes were written for this study, each referring to a person who might or might not be experiencing a mental disorder. Vignettes were two to five sentences long, and described a fictitious, unnamed person without identifying demographic information, unless this information was part of the diagnostic criteria of the condition in question. The vignettes did not label the conditions.

Of the 61 vignettes, 37 represented *DSM-5* conditions and 24 represented an assortment of non-*DSM-5* conditions. The 37 *DSM-5* conditions were sourced from all 19 broad classifications of the *DSM-5*, containing two from each classification except for one single-condition classification (gender dysphoria). The 24 non-*DSM-5* conditions were sampled using six heuristic categories drawn from the appendix of the *DSM-5* and previous studies (e.g., Giosan et al., 2001; Tikkinen et al., 2019): character flaws, bad habits, medical/neurological conditions that may have a psychiatric aspect, conditions for further study listed in *DSM-5*, cultural syndromes, and other conditions. Four conditions were included for each category. The full list of conditions is presented in Table 1.

**Table 1***List of All DSM-5 and Non-DSM-5 Conditions*

Category	Condition
<b>Non-DSM-5</b>	
Character flaws	Recurrent cheating, jealousy, malingering, selfishness
Bad habits	Procrastination, poor hygiene, social media disorder, chronic lateness
Medical/neurological conditions	Migraine headache, chronic fatigue syndrome, multiple sclerosis, prosopagnosia
Diagnostic categories proposed for further study in the DSM	Internet gaming disorder, caffeine use disorder, persistent complex bereavement disorder, suicidal behavior disorder
Cultural syndromes	Koro, mental disorder due to qigong, dhat, hikikomori
Other conditions	Obesity, midlife crisis, imposter syndrome, low self-esteem
<b>DSM-5</b>	
Neurodevelopmental disorders	Social communication disorder, intellectual developmental disorder
Schizophrenia spectrum and other psychotic disorders	Schizophrenia, schizoaffective disorder
Bipolar and related disorders	Bipolar I disorder (manic episode), cyclothymia
Depressive disorders	Major depressive disorder, persistent depressive disorder
Anxiety disorders	Social anxiety disorder, generalised anxiety disorder
Obsessive-compulsive and related disorders	Hoarding disorder, obsessive compulsive disorder
Trauma- and stressor-related disorders	Reactive attachment disorder, posttraumatic stress disorder
Dissociative disorders	Dissociative identity disorder, dissociative amnesia
Somatic symptom and related disorders	Factitious disorder, somatic symptom disorder
Feeding and eating disorders	Avoidant/restrictive food intake disorder, binge eating disorder
Elimination disorders	Enuresis, encopresis
Sleep-wake disorders	Insomnia disorder, restless legs syndrome
Sexual dysfunctions	Delayed ejaculation, female orgasmic disorder
Gender dysphoria	Gender dysphoria
Disruptive, impulse control, and conduct disorders	Conduct disorder, kleptomania
Substance use and addictive disorders	Gambling disorder, caffeine withdrawal disorder
Neurocognitive disorders	Delirium, mild neurocognitive disorder

Personality disorders

Paraphilic disorders

Narcissistic personality disorder, avoidant personality disorder

Sexual masochism disorder, exhibitionistic disorder

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### ***Label Rating Task***

Participants were randomly allocated either to a label rating or feature rating task. Those who completed the label rating task read all 61 vignettes in randomized order and rated the extent to which each condition was an example of one of the four (randomly assigned) labels: “mental illness”, “mental disorder”, “mental health problem”, or “psychological issue”. The item “This person has a [label]” was rated on a 6-point Likert scale (1 = *strongly disagree* to 6 = *strongly agree*).

### ***Feature Rating Task***

Participants who completed the feature rating task rated a random subset of 13 of the 61 vignettes on 11 items representing features that might be associated with the concept of mental disorder. These features were drawn widely from theoretical analyses of the concept of mental disorder and previous research (e.g., Haslam & Giosan, 2002). Features and corresponding items were as follows: Emotional distress (“This person is experiencing a lot of emotional distress”); impaired functioning (“This person has impaired functioning in everyday life”); severity (“The condition is severe”); need for treatment (“This person needs psychiatric treatment”); personal responsibility (“This person is responsible for the condition”); social aspect (“This condition only affects the person described, but not the people around them” [reversed]); stigma (“Most people would want to stay away from this person”); rarity (“This condition is rare”); normality (“This condition is experienced by everyone to some extent”); environmental cause (“The condition is caused by the person’s environment and life experiences”); biogenetic cause (“The condition is caused by genetic or other biological factors”). Participants rated their subset of conditions on the item “To what extent do you agree or disagree with the following statements describing the person above?” on a 7-point Likert scale (1 = *strongly disagree* to 7 = *strongly agree*).

## Procedure

The study was approved by the University of Melbourne Human Research Ethics Committee. An advertisement was listed on the Prolific platform. The eligibility of participants was dependent on creating a national representative sample of the United States reflecting the demographic distribution of age, gender, and ethnicity based on the U.S. Census Bureau's census data. Eligible and interested Prolific users were redirected to the Qualtrics survey platform where they were shown the Plain Language Statement and completed the consent form. Participants were randomly allocated into five subgroups. Four subgroups completed different versions of the label rating task, rating all 61 vignettes on one of the four alternative labels. One subgroup completed the feature rating task, rating a subset of the 61 vignettes on all 11 features. The label rating and feature rating task subgroups were sampled disproportionately to approximately equalize the duration of the task for participants. After completing the main study task, the survey collected demographic and other information, including age, gender, race, education level, income, political orientation, first language, English proficiency, and the number of years living in the United States. Participants were then debriefed and paid for completion.

## Results

All analyses were conducted on aggregated ratings to capture the average judgments of all participants on each task. As none of the research questions addressed individual differences in judgments but related instead to shared judgments of whether conditions are or are not mental disorders and of the features of those disorders, data aggregation was appropriate. Data from the four label rating subgroups represented mean ratings across 62-68 participants of the 61 conditions on the four alternative labels. Data from the feature rating subgroup represented mean ratings across 68-76 participants of the 61 conditions on

the 11 features. Therefore, the final data set for analysis contained mean ratings of the 61 conditions on 15 variables (four labels and 11 features).

### **Alternative labels**

To investigate whether the four alternative labels had similar or different meanings, we examined whether the label ratings were correlated across the 61 vignettes and whether they differed in mean rating (i.e., whether some labels were more inclusive than others). Table 2 presents the mean ratings of each label and the correlations between them. These correlations were extremely high, indicating that the same conditions were consistently rated as better or worse examples of all four labels. To evaluate differences in concept breadth, the mean rating of the four labels (calculated across the 61 conditions) was compared using a one-way ANOVA. There was a significant difference between the labels,  $F(3,257) = 8.68, p < .001$ . Tukey's HSD test indicated that "psychological issue" received higher mean ratings than "mental illness" ( $p < .001$ ), "mental disorder" ( $p < .001$ ), and "mental health problem" ( $p = .002$ ), but these three labels did not significantly differ from one another. Thus, a higher proportion of the conditions were judged to exemplify "psychological issue" than the other three labels. Taking a mean rating of 3.5 (the midpoint on the disagree-agree scale) as a threshold, 32 of the 61 conditions were rated as "mental illnesses", 35 as "mental disorders" and "mental health problems", and 43 as "psychological issues". "Psychological issue", while having very similar conceptual content to the other labels, referred to a broader concept than the other labels. Overall, 32 conditions were judged to be examples of all four labels, 10 additional conditions were judged to be examples of at least one label, and 19 conditions were judged not to be examples of any label.

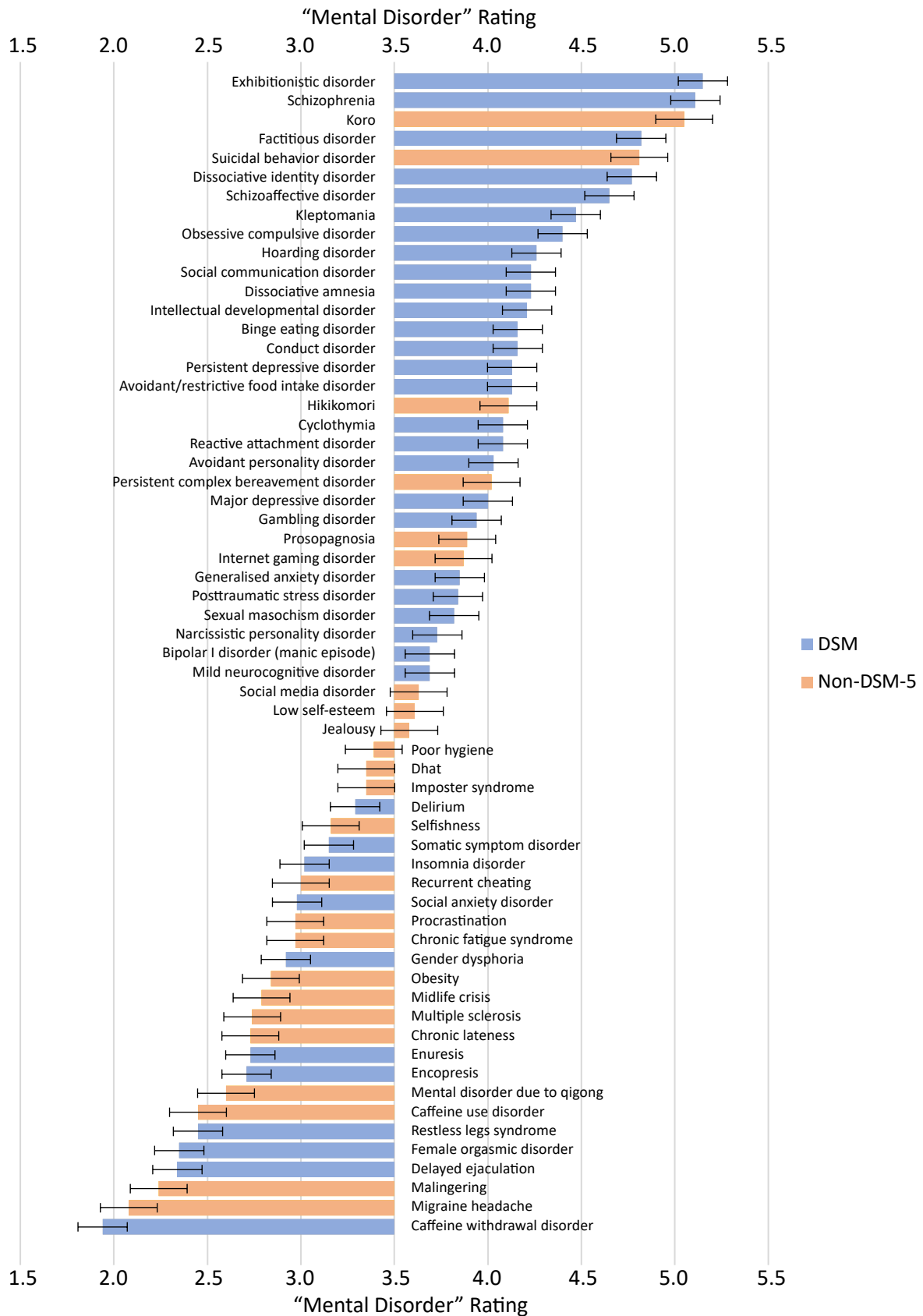


**Table 2***Descriptive Statistics and Correlations for Label Ratings*

Label	<i>n</i>	<i>M</i>	<i>SD</i>	Correlation			
				1	2	3	4
1. "Mental illness"	68	3.50	0.56	-	.97*	.97*	.94*
2. "Mental disorder"	62	3.57	0.53		-	.97*	.95*
3. "Mental health problem"	64	3.59	0.53			-	.97*
4. "Psychological issue"	67	3.93	0.51				-

\* $p < .001$ **Correspondence with *DSM-5***

To determine the degree to which participants' concepts corresponded extensionally to the *DSM-5*, we compared the mean ratings on the four labels between the 37 *DSM-5* conditions and the 24 non-*DSM-5* conditions. Vignettes representing *DSM-5* conditions were consistently rated higher than those representing non-*DSM-5* conditions, but this difference only reached significance for the "mental disorder" label,  $t(59) = 2.13$ ,  $p = .038$ , implying weak correspondence. Eleven of the 37 *DSM-5* conditions (i.e., social anxiety disorder, somatic symptom disorder, enuresis, encopresis, insomnia disorder, restless leg syndrome, delayed ejaculation, female orgasmic disorder, gender dysphoria, caffeine withdrawal disorder, delirium) were rated below 3.5 on the "mental disorder" item, and 11 out of 24 non-*DSM-5* conditions (i.e., jealousy, social media disorder, prosopagnosia, intellectual developmental disorder, internet gaming disorder, persistent complex bereavement disorder, suicidal behavior disorder, social communication disorder, koro, hikikomori, low self-esteem) were rated above 3.5. "Mental disorder" ratings of all conditions are shown in Figure 1.

**Figure 1***“Mental Disorder” Ratings for all 61 Conditions in Ranked Order*

### Features of mental disorder concepts

To analyse the features associated with mental disorder judgments (i.e., the intensional content of the mental disorder concept), a principal component analysis (PCA) was conducted on the mean ratings of the 11 features on the 61 conditions. Parallel Analysis suggested a three-component solution while MAP and scree tests suggested a four-component solution; the latter option aligned better with theoretical dimensions and accounted for 85.89% of the variance. Promax rotation method was employed to allow for correlations among the components. Component loadings are presented in Table 3.

**Table 3**

*Component Loadings From the Principal Component Analysis*

Item	Component loading			
	1	2	3	4
Emotional distress	<b>.89</b>	-.40	-.11	.16
Impaired functioning	<b>.86</b>	.25	-.17	-.28
Severity	<b>.80</b>	.26	.19	-.03
Needs treatment	<b>.66</b>	.28	.30	.34
Personal responsibility	<b>-.54</b>	<b>.56</b>	-.10	.30
Social aspect	.17	<b>.92</b>	-.24	-.05
Stigma	.03	<b>.87</b>	.18	-.02
Rarity	.06	-.28	<b>.97</b>	-.01
Normality	.09	-.18	<b>-.88</b>	.13
Biogenetic cause	.42	.06	-.07	<b>-.86</b>
Environmental cause	.36	.02	-.22	<b>.84</b>
Variance explained (%)	33.41	25.75	18.28	8.45

The four-component solution was clearly interpretable. The first component distinguished conditions that were judged to be severe, emotionally distressing, functionally impairing, and requiring psychiatric treatment, which roughly corresponded to a judgment

of harm. The second component represented variations in the extent to which conditions were stigmatized, seen as the fault of the affected person, and judged to affect other people. It could be described as a stigma and blame dimension. The third component identified conditions that were rare and beyond the continuum of normal experience, whereas the fourth component related to etiology, differentiating conditions seen as environmentally rather than biogenetically caused. The second component was moderately correlated with the fourth,  $r = .36$ ,  $p = .004$ , indicating that conditions seen as more environmentally than biogenetically caused were typically more stigmatized.

Ratings of the 61 conditions on each of the labels were regressed on the four component scores of these conditions to evaluate whether people's disorder judgments were based on the conditions' perceived harmfulness, stigma, rarity, and etiology. The findings of the four analyses are summarized in Table 4. The four components powerfully predicted the ratings of each of the label ratings, explaining 73-75% of the variances. In addition, there were substantial similarities in the relative strength of the predictions of the four components. Component 1 (harm) was consistently the most strongly associated with disorder ratings for all four labels (semi-partial correlations with them ranged from 0.58-0.59) and component 3 (rarity) was the second strongest predictor for three of the labels. Components 2 and 4 added to the prediction of disorder judgments, albeit relatively weakly, except for component 4 being the second strongest predictor for "psychological issue".

To clarify why "psychological issue" was more inclusive than the other labels, we compared component scores of the 10 conditions rated as "psychological issues" but not "mental illnesses" with those of the 31 conditions rated as both. The former group of conditions scored significantly lower on component 1,  $t(40) = -4.65$ ,  $p < .001$ , and component 3,  $t(40) = -2.33$ ,  $p = .025$ , suggesting that compared to other labels,

“psychological issue” encompassed some conditions that were perceived as relatively low in harm and rarity.

**Table 4**

*Summary of Multiple Regression Analyses for the Four Labels*

Label	Model Summary		Unstandardised <i>B</i> of component			
	$R^2$	$F(4,56)$	1	2	3	4
Mental disorder	0.73	38.01***	0.48***	0.22***	0.26***	0.13*
Mental illness	0.75	42.03***	0.47***	0.19**	0.26***	0.14*
Mental health problem	0.75	42.85***	0.56***	0.24***	0.27***	0.22**
Psychological issue	0.75	41.09***	0.49***	0.18**	0.20***	0.27***

\*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$

## Discussion

This study adds significantly to our understanding of the American public’s concepts of mental disorder. The findings speak to multiple aspects of these concepts, including the extent to which they vary according to different labels, their breadth (extension), their degree of resemblance to psychiatry’s concept of disorder, as institutionalised in the *DSM-5*, and the structure of features that underpin the disorder judgment (intension).

With regard to labels, our findings strongly suggest that different terms in widespread use are effectively synonymous, picking out nearly identical sets of conditions. Regarding breadth, one label (“psychological issue”) was more inclusive than the others, but overall, participants identified a substantial and very similar proportion of the conditions as mental disorders, mental illnesses, and mental health problems. Although the proportion of conditions participants identified as disorders was similar to the proportion identified as disorders by the *DSM-5*, there was only moderate overlap between the two sets of conditions. The public’s concept of disorder is not in lockstep with organized psychiatry.

Finally, we found that our conditions were differentiated along dimensions of harm, stigma, rarity, and etiology, all of which were associated to varying degrees with disorder ratings. By implication, people judge whether a condition is a mental disorder primarily based on its degree of distress and impairment and its level of rarity and aberration.

These findings have implications for theory, research, and practice. How mental health conditions as a group should be labelled has been an ongoing source of debate, some may prefer “mental illness” or “mental disorder”, whereas others favour alternatives such as “mental health problem”. Our findings suggest that these concerns may be overblown because the three terms identified effectively identical sets of conditions and were grounded in the same feature judgments. “Mental illness” might have been expected to have a more medical reference than “mental disorder”, picking out a narrower set of more severe, biogenetically caused conditions, and “mental health problem” might have been expected to have a broader reference given the recent expansion of understanding of “mental health” itself, but no such differences emerged. Our findings indicate that laypeople do not meaningfully differentiate between several prominent labels and instead treat them as interchangeable. This conclusion is also compatible with the recent finding that alternative terms had little or no impact on stigma or the association between stigma and key outcomes (Fox et al., 2021).

The current findings imply that harm is central to the public’s concept of mental disorder as it is in influential theoretical analyses. Harm, in the form of distress and impairment, is present in *DSM-5*’s definition of mental disorder and Wakefield’s (1992a) analysis, and it also composed the set of features that most powerfully predicted the ratings of mental disorder in our study. However, our analysis suggests that laypeople’s disorder judgments reflect some elements that are not generally considered relevant to the definition

of disorder by philosophically minded experts. Independent of harm severity, people were more likely to judge a condition to be a mental disorder if they perceived it as rare and unusual, stigmatized and blameworthy, and environmentally caused.

Most notably, judgments of rarity were potent predictors of disorder judgments, despite concerns that statistical abnormality should not be implicated in the mental disorder concept. Wakefield (1992b), for example, took issue with *DSM-III-R's* (American Psychiatric Association, 1987) inclusion of statistical unexpectedness as part of the definition of disorder. Our findings suggest that laypeople continue to consider statistical deviance or rarity as a feature of mental disorder, although their rarity judgments may represent an inference that an underlying dysfunction has occurred, per Wakefield's analysis. There is evidence that judgments of internal dysfunction contribute to laypeople's mental disorder judgments (Wakefield et al., 2006).

Our results may also have implications for practice. Attitudes to mental disorder and help-seeking are based on laypeople's concepts of disorder, not directly on those held by professionals, and the disparities suggested by our findings may be significant. The only modest correspondence between public concepts of disorder and the *DSM-5* classification implies that laypeople believe that some "official" diagnoses are not legitimate disorders and that the official classification excludes some legitimate disorders. For example, with two exceptions (i.e., social anxiety disorder and gender dysphoria), the *DSM-5* disorders that our participants did not judge to be disorders involved specific somatically focused complaints (i.e., somatic symptom disorder, enuresis, encopresis, insomnia, restless leg syndrome, female orgasmic disorder, delayed ejaculation, and caffeine withdrawal disorder). By implication, lay people tend not to view somatically focused complaints as falling within psychiatry's purview. In contrast, our participants also tended to pathologize some

conditions involving intense distress, behavioral addictions, or cultural syndromes that *DSM-5* does not recognize (e.g., persistent complex bereavement disorder, suicidal behavior disorder, internet gaming disorder, social media disorder, koro, hikikomori). Such discrepancies may contribute to misaligned help-seeking attitudes and behaviors, and consequently, conflicts between mental health professionals and the public over the former's domain of expertise.

Nonetheless, the study has some limitations. Brief vignettes cannot fully capture the complexity of *DSM-5* criterion sets or the clinical significance criterion, so judgments that specific *DSM-5* conditions were or were not judged to be disorders must be interpreted with caution. The fact that these judgments stipulated “mental” or “psychological” – rather than being about “disorder,” “illness,” “problem” or “issue” alone – might also have influenced them, potentially reducing ratings of conditions that lack an explicit mental aspect (e.g., “somatic symptom disorder”). Although it was highly predictive of disorder judgments, our set of features is likely to have missed some relevant elements in lay concepts of disorder. The features that distinguish *DSM-5* disorders from non-*DSM-5* disorders may also differ depending on the array of non-*DSM-5* disorders that is presented. Although our 24 non-*DSM-5* conditions were diverse and systematically sampled, a different pattern of disorder-linked features might be obtained if a different set of non-*DSM-5* disorders were used. Moreover, it should be noted that aggregated data of the kind employed in our analyses tend to yield stronger associations between variables than data based on individual judgments. “Ecological correlations” (Robinson, 2009) based on mean ratings of this sort should not be interpreted as equivalent to the correlations that would be obtained between individuals' ratings. The very strong associations obtained in our analysis are likely to overestimate the degree of predictability of mental disorder judgments at the level of



individual participants. In addition, our use of aggregated data to study general patterns in public concepts of disorder is likely to have obscured individual, demographic, and cultural variabilities. Research has shown that individuals vary widely in the inclusiveness of their concepts of disorder (McGrath et al., 2019); and that different ethnic or racial groups also vary in the breadth of these concepts in ways that may be implicated in cultural differences in help-seeking (Tse & Haslam, 2021). Further research should examine systematic individual and cultural group differences in disorder concepts.

Despite these limitations, the present study goes some distance toward clarifying how laypeople conceptualize mental disorder, or at least the mix of concepts, theories, and indicators they employ when making mental disorder judgments. Although a very large literature has been amassed on public conceptions of specific conditions, the broad concept has been neglected, despite its relevance to enduring theoretical debates on the nature of mental disorder and practical issues regarding the public's stigma and help-seeking. Our findings point to some significant points of disagreement between professional and public understandings of disorder, while also establishing that laypeople's concepts of mental disorder are systematic and structured.

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## **Chapter 3 (Studies 2-5): Individual Differences in the Expansiveness of Mental Disorder**

### **Concepts: Development and Validation of Concept Breadth Scales<sup>2</sup>**

#### **Abstract**

##### **Background**

What people consider to be a mental disorder is likely to influence how they perceive others who are experiencing problems and whether they seek help for their own problems. However, no measure is available to assess individual differences in the expansiveness or breadth of concepts of mental disorder. Four studies aimed to develop and validate such two measures. The Concept Breadth-Vertical (CB-V) scale assesses variability in the severity threshold at which unusual behavior or experience is judged to reflect disorder, whereas the Concept Breadth-Horizontal (CB-H) scale assesses variability in the range of phenomena judged to be disorders.

##### **Methods**

In Study 2 ( $N = 201$ ) for the CB-V, participants read vignettes of varying severity for each of 10 mental disorders, and rated whether the subject had a disorder. Study 3 ( $N = 502$ ) used exploratory factor analyses to examine 10 CB-V items from the Study 2 and 20 vignette-based items for constructing the CB-H. Study 4 ( $N = 298$ ) employed confirmatory factor analysis to validate the scales' structure and examined their convergent validity with a measure of harm concept breadth and their discriminant validity with measures of mental health literacy. Study 5 ( $N = 298$ ) explored associations of the scales with other mental health variables, including stigma and help-seeking attitudes.

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<sup>2</sup> This chapter is presented in the exact format of a peer-reviewed published article. For the sake of consistency, the original referencing format from the published version has been retained. However, the numbering of studies, tables, and figures has been adjusted to align with the chronological order of presentation in this thesis.

## Results

Study 3 supported the unifactorial structure of each item set, refined each set into a scale, and demonstrated acceptable reliabilities. Study 4 provided support for the scales' convergent and discriminant validities. Study 5 showed that the scales were associated negatively with stigma, and positively with help-seeking attitudes and self-reported mental health problems. Studies 4 and 5 further indicated that younger and more politically liberal participants hold broader concepts of mental disorder.

## Conclusions

The new concept breadth scales are psychometrically sound measures of a promising new concept in the study of beliefs and attitudes about mental health. Potential future research directions are discussed.

*Keywords:* concept breadth, concept creep, mental disorder, mental illness, mental health literacy, stigma, help-seeking attitudes

## Introduction

How “mental disorder” should be defined and delimited has been a topic of philosophical and clinical debates for many decades (Stein et al., 2021). Theorists have proposed abstract definitions or deny that any clear-cut definition is possible (e.g., Haslam et al., 2012; Lilienfeld & Marino, 1999). Psychiatric classifications provide lists of officially recognized disorders that serve as “ostensive” definitions of what the concept of disorder includes. When these classifications are revised, critics argue about the inclusion or exclusion of particular disorders and shifts in the diagnostic criteria for particular disorders (e.g., Pai et al., 2017; Rodríguez-Testal et al., 2014; Wakefield, 1992b; Jerome C. Wakefield, 2013). These disputes hinge on where the boundary between disorder and non-disorder should be drawn. The placement of that boundary has significant implications for clinical practice, for research, and for the people whom it includes or excludes.

Discussions over the definition of mental disorder often focus on the expansiveness of the boundary. Recurring arguments over the expansion of the concept are often framed in terms of “diagnostic inflation” (Batstra & Frances, 2012), “psychiatrization” (Beeker et al., 2021), “medicalization” (Chakravarty, 2011; Conrad & Slodden, 2013), “pathologization” (Brinkmann, 2016), or “disease mongering” (Saddichha, 2010), reflecting a concern that psychiatric classifications have broadened the range of psychological phenomena that count as disorders (Foulkes & Andrews, 2023; Haslam, Tse, et al., 2021). Critics of this supposed expansion contend that it promotes over-diagnosis along with unnecessary and potentially harmful treatment, as well as endangering our sense of normality (Frances, 2013b; Horwitz & Wakefield, 2007, 2012). Advocates of expansion often counter-argue that new diagnoses or increasingly expansive criteria for existing disorders can identify people in genuine need



of clinical attention (European Delirium Association & American Delirium Society, 2014; Nemeroff et al., 2013).

Most of the debate over the expansiveness or breadth of definitions of mental disorder has focused on philosophical definitions and official classifications. However, it is equally important to understand how laypeople define mental disorders. Lay concepts of mental disorder are likely to influence how members of the public perceive people experiencing mental illness and whether or not they seek help for their problems than concepts advocated by philosophers and psychiatric nosologists. Several lines of research have examined laypeople's "illness beliefs" about specific disorders and the idioms of distress that are prominent in their cultures (e.g., Nichter, 1981; Yeung et al., 2004), but relatively little research has quantitatively examined how laypeople define mental disorder as a general concept. Several studies (e.g., Haslam & Giosan, 2002; Rüsç et al., 2011) have explored this question and examined cultural differences in the breadth and key defining features of disorder concepts. For instance, Tse and Haslam (2023b [Thesis Study 1]) found that American participants tended to hold a concept of disorder that was similar in breadth to the *DSM-5* but not closely aligned with it, and that their disorder judgments were primarily based on the extent to which a person's problems involved severe harm (distress and impairment) and were rare.

One novel approach to this topic has been developed in theory and research on "concept creep". Haslam (2016) proposed that in recent decades many concepts related to harm have undergone a semantic expansion, so they now refer to a broader range of phenomena than previously. For example, in psychology "bullying" initially referred to intentional, repeated aggression perpetrated downwards in a power hierarchy among children, but it has gradually expanded its reach so now it may refer to unintentional,

unrepeated aggression that is commonly perpetrated laterally or even upward in adult workplaces. Haslam and colleagues have argued that concept creep is driven by a rising cultural sensitivity to harm and takes two forms. Horizontal creep occurs when a concept broadens to include qualitatively new phenomena, such as when “bullying” is applied to adults rather than only to children, or when “addiction” is expanded to encompass compulsive behaviors that do not involve ingestion of substances, such as gambling. Vertical creep occurs when a concept broadens to include quantitatively less severe phenomena, such as when bullying expands to include unrepeated behavior or “addiction” includes problematic substance use without physiological dependency.

The theory of concept creep draws attention to the breadth of concepts as a focus of research attention. This focus on “concept breadth” – the semantic range that increases when concept creep takes place – can be applied to both professional and lay concepts and examined in relation to any harm-related concept, including mental disorder. In principle, the breadth of people’s concepts of disorder can be measured and the causes, correlates, and consequences of individual or group differences in concept breadth can be investigated. Individual difference measures of the breadth of several harm-related concepts have been developed and found to be associated with an assortment of demographic, personality, and attitudinal variables (McGrath & Haslam, 2020; McGrath et al., 2019). Developing a measure specific to the concept of mental disorder would enable a program of research into the implications of broad versus narrow lay concepts of mental disorder that might complement and illuminate theoretical discussions of how mental disorder should be defined and of the implications of diagnostic inflation.

The range of mental health-related phenomena that mental disorder concept breadth might be associated with is potentially large, but stigma and help-seeking are two

promising candidates. Stigma refers to stereotypes, prejudice, and discrimination towards people with mental disorders (Link & Phelan, 2001), including perceptions that they are dangerous and unpredictable and a tendency to seek social distance from them. A vast body of research has examined the predictors of stigmatizing attitudes and documented the negative implications they have for the well-being of people experiencing mental ill-health and their likelihood of seeking treatment (e.g., Rüsch et al., 2005; Schomerus, Stolzenburg, et al., 2019; Sowislo, Gonet-Wirz, et al., 2017; Zartaloudi & Madianos, 2010). Although little or no research has examined the possibility, people holding broader concepts of mental disorder might have less stigmatizing attitudes because they are more likely to see mental disorder as common and relatively “normal” rather than rare and deviant. If stigma partly reflects fear or disapproval of social deviancy, a vertically and horizontally broad concept of mental disorder should undermine it.

Broader concepts of mental disorder may also promote help-seeking for mental health problems. Although stigma is one well-established factor discouraging people from seeking help, another plausible factor is holding a narrow concept of mental disorder. People holding such a concept may be less likely than others to identify their experiences as a case of mental disorder and therefore less likely to see professional help as appropriate. Preliminary evidence for this possibility was provided by Tse and Haslam’s (2021) study, which found that Americans with a broader concept of mental disorder held more positive attitudes toward help-seeking, and that the larger concept breadth of White Americans relative to Asian Americans partially accounted for their more positive help-seeking attitudes. It remains to be determined whether mental disorder concept breadth is associated with actual help-seeking behavior in addition to help-seeking attitudes and whether it clarifies other cultural or ethnic differences. Similarly, whether individual

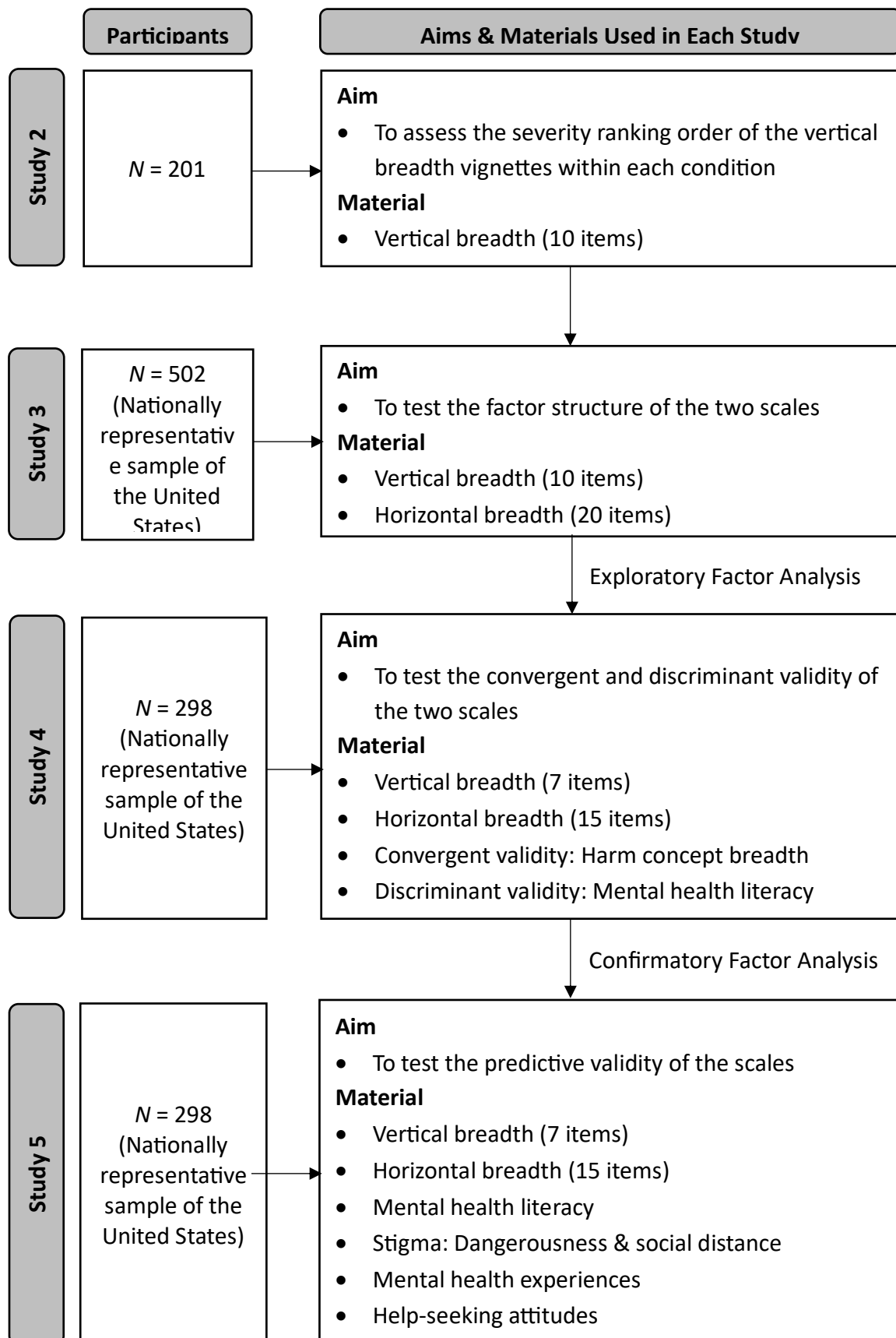
differences in concept breadth are related to other mental health-related phenomena – the likelihood of self-diagnosis, the risk of developing disorders, the belief that mental disorder falls on a continuum with normality rather than being categorically separate, the preference for certain explanatory models of mental disorder, and so on – awaits further research. Research on any of these relationships requires the development of a validated measure of mental disorder concept breadth.

Any attempt to validate such a measure and advance a program of research on concept breadth must evaluate its relationship to related constructs. One key construct is mental health literacy, the accurate understanding and knowledge of mental disorders and their treatments (Jorm, 2012). Greater mental health literacy – which is associated with being female (Bernstein et al., 2020; Furnham, Abajian, et al., 2011; Reavley et al., 2014), more educated (Bernstein et al., 2020; Kim et al., 2017; Reavley et al., 2014), and higher socioeconomic status (SES; Holman, 2015) – has been found to predict better recognition of signs and symptoms and more professional help-seeking (Reavley & Jorm, 2011). Interventions that target mental health literacy have been shown to be effective in decreasing stigma (Reavley & Jorm, 2011) and improving other mental health outcomes (Bu et al., 2020; Kutcher et al., 2016).

Although the constructs of mental disorder concept breadth and mental health literacy have superficial similarities, they are conceptually distinct. Mental health literacy relates to the factual accuracy of knowledge, based on correspondence with expert knowledge in the mental health professions (e.g., the DSM classification; Jorm, 2000), whereas mental disorder concept breadth relates not to accuracy but to the expansiveness of people's beliefs of what counts as a disorder. A person could hold a broad but inaccurate concept, a narrow but accurate concept (if at least most recognized mental disorders were

correctly identified as such), and any other combinations. In principle, breadth and accuracy are separate features of people's concepts of mental disorder. However, determining whether they are relatively independent in practice awaits an adequate measure of mental disorder concept breadth, and it will be important to establish whether any links between concept breadth and other mental health-related variables, such as stigma, are not attributable to mental health literacy.

The present research includes a series of studies that aimed to develop and validate new measures of mental disorder concept breadth that would capture for the first time the vertical and horizontal dimensions of concept breadth. The validation process aimed to evaluate the factor structure of the measures, their discriminant validity vis-à-vis mental health literacy, and their capacity to predict prominent mental health-related variables, notably stigma, help-seeking, and personal experience with mental disorder. An overview of the studies is presented in Figure 2. The overarching goal of the research was to develop psychometrically robust scales to enable future research on a novel and promising construct.

**Figure 2***Overview of Studies for the Development of Two Scales*

### **Studies 2 and 3**

The first two studies in the series aimed to develop sets of items for the two proposed scales, refine these sets, and carry out a preliminary analysis of their latent structure. Study 2 developed candidate items for the vertical breadth scale (CB-V), and the main study used exploratory factor analysis of the respective item sets to test for a unifactorial structure in each and to identify and remove weak items.

#### **Method**

##### ***Participants***

Following recommendations that a sample of 500 is very good for scale development purposes (Comrey & Lee, 2013) and that the participant-to-variables ratio should exceed 10 in factor-analytic research (Gorsuch, 1990), we recruited 536 participants from Prolific Academic who were paid for their participation. The sample was nationally representative of the United States of America, stratified by gender, age, and race. Of the 536 participants, 34 were excluded due to failing two out of three attention checks and/or not following instructions. The data analysis was conducted on 502 participants. Demographic characteristics for this study and Studies 4 and 5 are presented in Table 5.

**Table 5***Demographic Composition of Studies 3–5*

	Study 3 ( <i>N</i> = 502)	Study 4 ( <i>N</i> = 298)	Study 5 ( <i>N</i> = 298)
Age			
Range	18-84	18-85	18-91
Mean ( <i>SD</i> )	45.00 (15.85)	45.76 (16.19)	44.20 (15.76)
Gender			
Men	241	140	138
Women	253	155	152
Other	8	3	8
Ethnicity			
White	357	213	219
Hispanic or Latino/a	30	19	17
Black or African American	69	40	37
Asian	37	17	18
Other	9	9	7
Education			
Some high school	6	2	3
High school graduate	61	40	32
Some college	114	64	72
Associate degree	55	37	27
Bachelor's degree	179	109	110
Master's degree	64	41	46
Doctoral degree	23	5	8
Annual income (USD)			
Less than \$50000	273	188	161
\$50000-99999	156	78	93
\$100000-149999	39	17	27
\$150000 or more	21	6	10
Prefer not to say	13	9	7

**Materials**

**Vertical Scale Items.** Ten vignettes, each describing a *DSM-5* disorder, were selected from a set of 61 vignettes developed by Tse and Haslam (2023b [Thesis Study 1]). The 10 diverse disorders – schizophrenia, bipolar I disorder (manic episode), major depressive disorder, generalised anxiety disorder, obsessive compulsive disorder, dissociative identity disorder, binge eating disorder, conduct disorder, gambling disorder, and avoidant



personality disorder – were chosen for their relatively high familiarity to the public. Based on each original vignette’s mean rating on the item “This person has a mental disorder” from Tse and Haslam’s (2023b [Thesis Study 1]) study, four new versions of each vignette were written to describe varying levels of severity of the same disorder both below and above the original version. The intended outcome was a set of five vignettes for each disorder whose severity levels increased in small steps from a clearly subthreshold case to a case that clearly exceeded the diagnostic threshold. Severity variations were carefully calibrated by varying the intensity, duration, impairment and/or number of symptoms presented in the vignette, although all other aspects of the vignettes were held constant across all five versions.

We conducted Study 2 ( $N = 201$ ) on the 10 vertical breadth items to assess the severity ranking order of the vignettes within each condition. The main focus of Study 2 was to ensure a relatively uniform structure of these 10 sets of vignettes by having approximately equal intervals in rated severity between each severity level. A sample of 204 Americans was recruited via Prolific. Three participants were excluded for failing at least two out of the three attention check questions. The final sample of 201 had a mean age of 35.66 ( $SD = 14.48$ ); the majority were white (69.70%) and approximately half were men (50.70%). After posting an advertisement on Prolific, interested platform users were directed to a Qualtrics link where they provided consent before being randomly allocated to one of the two groups ( $ns = 100$  &  $101$ ). Participants in each group rated 25 vignettes – all five severity levels for a different set of five disorders, depending on the group – on the item “This person has a mental disorder” (1 = *Strongly disagree* to 6 = *Strongly agree*). We inspected the mean ratings to ensure they followed the intended severity rank order, and they did for all 10 disorders. Minor adjustments to vignette wording were then made in an effort to equalize the rating interval between successive severity levels (e.g., subtly decreasing the severity of

a vignette if its mean rating was too close to that of the vignette at the next more severe level). Study 2 therefore resulted in a revised set of 50 vignettes describing five severity levels of 10 *DSM-5* disorders.

Study 3 therefore contained 10 candidate items for a vertical concept breadth scale, each containing five vignettes varying in level of severity. Each item was presented on a single page from most severe (top) to least severe (bottom) with a question prompt at the top “Do any of these people described below have a mental disorder?”. For each vignette, participants judged whether the person described in it has a mental disorder with a “Yes” or “No” response. Each item was then scored from 0 to 5 based on the number of “Yes” responses. Higher scores indicate greater vertical breadth or a lower disorder judgment threshold.

**Horizontal Scale Items.** As with the candidate vertical scale items, the candidate items for the horizontal breadth scale were sourced from Tse and Haslam’s (2023b [Thesis Study 1]) vignettes. Ten *DSM-5* disorders (persistent depressive disorder, social anxiety disorder, posttraumatic stress disorder, somatic symptom disorder, insomnia disorder, gender dysphoria, delirium, mild neurocognitive disorder, narcissistic personality disorder, and sexual masochism disorder) and 10 non-disorders (recurrent cheating, jealousy, selfishness, poor hygiene, social media disorder, chronic fatigue syndrome, prosopagnosia, internet gaming disorder, Dhat, and imposter syndrome) were selected. These vignettes were chosen based on three considerations. First, they did not overlap with those used for the vertical scale candidate items. Second, a substantial set of *DSM-5* non-disorders was sampled because having a broad concept of mental disorder may entail judging conditions to be disorders beyond official psychiatry’s current boundary (false positives). Second, we aimed to select vignettes that would elicit varying judgments from participants rather than

high levels of consensus. Thus, vignettes were selected based on having mean ratings on the item “This person has a mental disorder” close to the 3.5 mid-point (on a 6-point Likert scale) and a relatively large standard deviation ( $SD > 1.30$ ) in Tse and Haslam’s (2023b [Thesis Study 1]) study. The candidate items therefore had roughly equal numbers of participants judging them to be disorders or not to be disorders.

In Study 3, participants rated the 20 candidate horizontal breadth scale items on their agreement with the statement “This person has a mental disorder” on a 6-point Likert scale (1 = *Strongly disagree* to 6 = *Strongly agree*).

### ***Procedure***

This research project was approved by the Human Research Ethics Committee of the University of Melbourne. Prolific users were directed to a Plain Language Statement and gave their consent prior to participating in the survey on Qualtrics. They completed the candidate vertical breadth items followed by the candidate horizontal breadth items, both sets in randomized order for each participant, and then responded to demographic questions (age, gender, ethnicity, education, income, political orientation, years living in the United States, first language, and English proficiency), before being debriefed and paid.

### **Results**

#### ***Vertical Breadth Items***

The suitability of the data for exploratory factor analysis was reflected by a high value of Kaiser-Meyer-Olkin measure of sampling adequacy of .89 and a significant Bartlett’s Test of Sphericity,  $\chi^2(45) = 1181.40, p < .001$ . The parallel, MAP, and scree tests all suggested a one-factor solution. Using the maximum likelihood method, the model accounted for 38.94% of the variance. Factor loadings are presented in Table 6. The three lowest-loading items (the conduct disorder, schizophrenia, and gambling disorder vignette sets), which also

had relatively low communalities (.21 to .27), were removed for the final vertical breadth scale (CB-V). The remaining seven items showed very good internal consistency (Cronbach's  $\alpha = 0.82$ ). For detailed wordings of the retained vertical breadth items, see Appendix A.

**Table 6**

*Mean Item Scores and Factor Loadings for the Vertical Breadth Candidate Items*

Item	Mean	SD	Factor loadings
Generalized anxiety disorder	3.01	1.43	.69
Major depressive disorder	3.29	1.57	.63
Bipolar I disorder	3.05	1.65	.62
Avoidant personality disorder	2.82	1.76	.60
Binge eating disorder	2.80	1.60	.57
Obsessive compulsive disorder	3.65	1.13	.53
Dissociative identity disorder	3.48	1.20	.53
Conduct disorder <sup>a</sup>	3.54	1.50	.52
Schizophrenia <sup>a</sup>	3.10	0.93	.49
Gambling disorder <sup>a</sup>	3.33	1.93	.46

<sup>a</sup> Item was removed for the final vertical scale (CB-V)

**Vertical Breadth – Short Form (CB-V-S).** In light of the complexity and time required to read and judge the 35 vignettes (seven items, each with five severity levels) in the CB-V scale, we created a short form. We selected the most marginal vignette for each of the 10 original items (i.e., the vignette closest to an even split of participants answering “Yes” and “No” to the statement “This person has a mental disorder”) and these made up the CB-V-S (see Appendix B). The CB-V-S therefore includes 10 threshold items with a dichotomous “Yes” (1 score) or “No” (0 score) response (possible score range 0 – 10). Based on Study 3 data, we conducted a principal component analysis (PCA) to evaluate the unidimensionality of the short form. Parallel, MAP, and scree tests all suggested a one-component solution,

which accounted for 32.81% of the variance. Component loadings are presented in Table 7.

The CB-V-S also had a good internal consistency with a Cronbach's alpha of .77 and correlated .87 ( $p < .001$ ) with the CB-V, indicating a very strong convergence.

**Table 7**

*Mean Item Scores and Factor Loadings for the Vertical Breadth – Short Form (CB-V-S)*

Item	Mean	SD	Component loadings
Major depressive disorder	0.53	0.50	.61
Generalized anxiety disorder	0.33	0.47	.61
Bipolar I disorder	0.43	0.50	.60
Binge eating disorder	0.56	0.50	.60
Obsessive compulsive disorder	0.61	0.49	.57
Gambling disorder	0.45	0.50	.57
Dissociative identity disorder	0.51	0.50	.56
Conduct disorder	0.57	0.50	.56
Avoidant personality disorder	0.58	0.49	.55
Schizophrenia	0.26	0.44	.49

### ***Horizontal Breadth Items***

The suitability of the data for exploratory factor analysis was supported by a high value of Kaiser-Meyer-Olkin measure of sampling adequacy of .86 and a significant Bartlett's Test of Sphericity,  $\chi^2 (190) = 2161.03, p < .001$ . The parallel test suggested a three-factor solution while the MAP and scree tests suggested a one-factor solution, which was followed. Using the maximum likelihood method, the model accounted for 25.05% of the variance. Factor loadings are presented in Table 8. Five items were removed based on having the lowest factor loadings (.15 to .32) and communalities (.02 to .10). The reliability of the remaining 15 items was very good (Cronbach's alpha = 0.83). Reassuringly, all retained items

had mean ratings near the midpoint of the disorder judgment scale and high response variability. For detailed wordings of the retained horizontal breadth items, see Appendix C.

**Table 8**

*Mean Item Scores and Factor Loadings for the Horizontal Breadth Candidate Items*

Item	Mean	SD	Factor loadings
Imposter syndrome	3.09	1.32	.59
Social media disorder	3.57	1.34	.58
Narcissistic personality disorder	4.02	1.53	.57
Jealousy	3.64	1.31	.57
Internet gaming disorder	4.18	1.37	.56
Chronic fatigue syndrome	3.14	1.38	.53
Insomnia disorder	3.13	1.37	.52
Social anxiety disorder	2.77	1.31	.50
Recurrent cheating	2.62	1.30	.50
Selfishness	3.43	1.56	.50
Posttraumatic stress disorder	4.07	1.49	.46
Dhat	3.76	1.44	.46
Persistent depressive disorder	4.13	1.26	.45
Somatic symptom disorder	3.16	1.40	.44
Delirium	3.58	1.41	.39
Poor hygiene <sup>a</sup>	3.06	1.41	.32
Mild neurocognitive disorder <sup>a</sup>	3.45	1.36	.30
Sexual masochism disorder <sup>a</sup>	3.49	1.53	.29
Prosopagnosia <sup>a</sup>	4.24	1.38	.22
Gender dysphoria <sup>a</sup>	2.35	1.36	.15

<sup>a</sup> Item was removed for the final horizontal scale.

## Discussion

Studies 2 and 3 represent a thorough and systematic scale development process that employed an extensive set of vignettes. Preliminary evidence supports the unifactorial structure of the two new scales, and after the elimination of psychometrically weaker items, the scales appear to meet very good standards of internal consistency. The CB-H scale is a

relatively typical vignette-based measure whose items appear to successfully capture relatively marginal examples of DSM-5 conditions that roughly half of our participants judged to be, or not to be, mental disorders. The CB-V scale is a more unusual scale that uses severity-ranked sets of vignettes to identify participants' thresholds for judging where "normality" ends and disorder begins, akin to a psychophysical task for assessing perceptual thresholds. This innovative scale format yields adequate reliability and may serve as a valuable supplement to the measure of horizontal concept breadth. A more conventional short version also offers reliable measurement.

#### Study 4

Study 4 used the CB-H and CB-V scales and had four primary goals. First, it aimed to check the reliability of the scales in a new sample. Second, it used confirmatory factor analysis to conduct a stronger test of the unifactorial structure of the two scales. Third, the study began the process of validating the new scales by testing whether they converged with an established concept breadth scale and diverged from measures of mental health literacy. The latter construct might be superficially confused with concept breadth but relates to the accuracy of mental health knowledge rather than the breadth of the concept of what counts as a mental disorder, and there is little or no reason *a priori* why greater literacy should covary with greater or lesser concept breadth. Finally, we aimed to explore possible demographic correlates of concept breadth, noting previous findings suggesting that younger and more politically liberal people tend to hold broader harm concepts (McGrath & Haslam, 2020; McGrath et al., 2019). We predicted that both concept breadth scales would be unifactorial, would correlate strongly with the prior measure of concept breadth (although that measure does not include an assessment of vertical breadth), and would correlate weakly or not at all with two measures of mental health literacy.

## Method

### *Participants*

We sought a sample of at least 300 participants in view of our plan to conduct confirmatory factor analysis with up to 15 items and to have sufficient statistical power to detect potentially small associations between our scales and participants' demographic characteristics. Another nationally representative sample of the United States was recruited on the Prolific platform. Out of the 310 complete responses, 12 participants were excluded for the following reasons: not following instructions (5), failing two or more attention checks (5), and straight-line responses (2). The final sample for analysis consisted of 298 participants whose demographic characteristics are presented in Table 5.

### *Materials*

**Concept Breadth – CB-V and CB-H.** The seven and 15 items retained from Study 3 for the respective scales were used in the present study. Instructions for participants and scoring were identical to Study 3.

**Harm Concept Breadth Scale (HCBS) – Mental Disorder Subscale (McGrath & Haslam, 2020).** The HCBS measures the breadth of harm-related concepts, specifically the concepts of bullying, trauma, prejudice, and mental disorder, which are included as four subscales. The mental disorder was employed to test the convergent validity of the newly developed scales. The 10-item subscale assesses individual differences in the breadth of the concept of mental disorder. Participants read 10 vignettes of 30 to 50 words, each describing a person's experience. They then rated their agreement to "I believe this is an example of mental disorder" on a 6-point Likert scale (1 = *Strongly disagree* to 6 = *Strongly agree*). A higher score indicates greater breadth.



**Mental Health Literacy.** There is no consensus on the definition or measurement of mental health literacy (O'Connor et al., 2014). Some measures assess one aspect of the construct while others assess multiple aspects. Therefore, two popular measures of mental health literacy were used to test the discriminant validity of the concept breadth scales.

***Mental Health Literacy Measure (Jung et al., 2016).*** This measure contains 26 items measuring three dimensions of mental health literacy: knowledge-oriented, beliefs-oriented, and resource-oriented mental health literacy. Participants responded with their agreement to the items measuring the first two dimensions on a 5-point Likert scale (1 = *Strongly disagree* to 5 = *Strongly agree*) with the option of “I don't know”. Those who responded “strongly agree” or “agree” were awarded 1 point. The response options for the five items on the resource-oriented dimension were dichotomous “Yes” (1 point) and “No” (0 points). Example items are “Counseling is a helpful treatment for depression” (Knowledge-oriented); “Mental illness is a short-term disorder” (Beliefs-oriented); and “I know where to go to receive mental health services” (Resource-oriented). Scores from the three dimensions were summed with a higher score indicating higher literacy.

***Mental Health Literacy Assessment for College Students (Rabin et al., 2021).*** The MHLA-c is a unidimensional measure with some items adapted from the Multiple-Choice Knowledge of Mental Illnesses Test (MC-KOMIT; Compton et al., 2011). There are 18 multiple-choice questions, each with one correct option from five options. For example, “Which of the following is the most common long-term course of dementia?” with options: (a) improvement; (b) paralysis; (c) progression; (d) remission; and (e) stabilization. Participants get 1 point if they answer a question correctly. A higher total score indicates greater literacy. There are three versions of this measure, and form B was used in this study.

## ***Procedure***

Similar Prolific recruitment and consent processes described in Study 3 preceded the Study 2 survey. Participants then completed a battery of all measures in a randomized order, followed by the same set of demographic questions as in Study 3. Participants were then debriefed and paid for their time.

## **Results**

### ***Associations With Demographic Variables***

Mean scores on the concept breadth scales did not differ by gender – CB-V,  $t(293) = 0.65$ ,  $p = .517$ , and CB-H,  $t(293) = 1.67$ ,  $p = .097$  – nor by race, dichotomized as White or non-White participants due to the low numbers in most minority groups – CB-V,  $t(296) = 1.36$ ,  $p = .174$ , and CB-H,  $t(296) = 1.80$ ,  $p = .072$ . Age was not significantly associated with the CB-V ( $r = -.004$ ,  $p = .941$ ) nor CB-H ( $r = -.11$ ,  $p = .050$ ). The scales also did not differ according to education level (coded as less than college, some college or Bachelor's degree, and more than Bachelor's degree) – CB-V,  $F(2, 295) = 0.67$ ,  $p = .514$ , and CB-H,  $F(2, 295) = 0.38$ ,  $p = .683$  – nor income — CB-V,  $F(3, 285) = 0.88$ ,  $p = .454$ , and CB-H,  $F(3, 285) = 1.33$ ,  $p = .265$ . CB-H ( $r = -.17$ ,  $p = .004$ ) but not CB-V ( $r = -.08$ ,  $p = .188$ ) correlated with political orientation, indicating that more liberal participants identified a wider range of vignettes as examples of mental disorder than more conservative participants.

### ***Confirmatory Factor Analysis***

Confirmatory factor analyses were carried out for the CB-V and the CB-H separately and model fit indices were examined for each. According to Hu and Bentler (1999), the comparative fit index (CFI) and Tucker-Lewis index (TLI)  $> .95$ , and root mean square error of approximation (RMSEA)  $< .06$  indicate a good model fit. For the CB-V, the CFI was 1.00, TLI was 1.00, and RMSEA was .00, 95%CI [.00,.06]. For the CB-H scale, the CFI was 0.95, TLI was

0.93, and RMSEA was .05, 95%CI [.04,.06]. With the marginal exception of TLI for CB-H, all other indices reflected a good model fit. Cronbach's alpha for the CB-V and CB-H scales were .79 and .82, respectively, and the scales correlated positively,  $r = .48, p < .001$ .

### ***Convergent and Discriminant Validity***

The HCBS mental disorder subscale correlated .49 ( $p < .001$ ) with the CB-V scale and .61 ( $p < .001$ ) with the CB-H scale. The stronger convergence with the CB-H scale was compatible with the HCBS's focus on horizontal concept breadth. The CB-V and CB-H scales correlated weakly but positively with the Mental Health Literacy Measure,  $r = .19, p < .001$ , and  $r = .17, p = .003$  respectively, and also with the MHLA-c,  $r = .19, p < .001$ , and  $r = .22, p < .001$ , respectively. The modest magnitude of these correlations supported the conceptual and empirical distinctness of concept breadth from mental health literacy.

### **Discussion**

Study 4 confirmed that the two concept breadth scales represent unitary constructs and can be measured reliably. The study further documents that the scales converge as expected with an existing measure of concept breadth. There are three good reasons to argue that the CB-H and CB-V are likely to be superior measures of concept breadth. First, they were developed through a more thorough scale development process. Second, they were constructed with a specific goal of assessing the breadth of the concept of mental disorder, whereas the HCBS subscale was designed as one element of the broader construct of harm-related concept breadth. Third, the new measures assess both dimensions of concept breadth whereas the earlier measure only assessed the horizontal component. The new scales should therefore be the preferred measure for researchers with a specific mental health-related focus.

Evidence that the new scales are not redundant with mental health literacy, measured using two distinct scales, supports the distinctness of the construct of concept breadth. It suggests that concept breadth may have a unique capacity to predict and explain mental health-related phenomena independently of that well-studied and fruitful construct. Although it might have transpired that people with broad concepts of mental disorder have high levels of literacy – a finding that would be expected if people lacking knowledge tended to have narrow concepts of disorder and were unaware of the range of disorders – that correlation was weak. The most plausible interpretation of that weak association is that people's beliefs about the range and severity threshold for mental disorders are not strongly linked to their levels of factual knowledge about mental disorder.

### **Study 5**

Study 5 extended the validation of the concept breadth scales by investigating their associations with several important mental health-related variables. In particular, it examined whether holding broad concepts of mental disorder is associated with stigma towards affected people, with more positive attitudes to help-seeking for mental health problems, and with personal experience of mental ill health. We included a measure of mental health literacy in this study to determine whether an association between concept breadth and other variables are independent of an established predictor of those variables.

We predicted that broad concepts of mental disorder would be associated with less stigmatizing attitudes because such concepts should be linked to perceiving mental disorder as common and normal rather than rare and aberrant. We predicted that broad concepts would also be associated with more positive help-seeking attitudes, consistent with the findings of Tse and Haslam (2021), for the same reasons. We had no predictions about associations of concept breadth with personal experience of mental health problems, but

positive associations are plausible both because experiencing these problems could expand people's understanding of mental disorder and because people with broader concepts may be more likely to identify their problems as disorders. In addition to examining these associations, we again explored associations between concept breadth and demographic variables.

## **Method**

### ***Participants***

Another nationally representative sample of the United States was recruited on the Prolific platform. Out of the 306 complete responses, eight participants were excluded for not following instructions (7) or failing two or more attention checks (1). The final sample for analysis consisted of 298 participants. The demographic characteristics of the participants are presented in Table 5.

### ***Materials***

In addition to the two concept breadth scales and the demographic questions, several additional measures were included in the survey.

**Mental Health Literacy.** The MHLA-c (Rabin et al., 2021) was used to measure individuals' level of mental health literacy with multiple-choice questions. A description of the scale is presented in Study 4.

**Stigma.** Aspects of stigma were assessed by two well-known scales. To assess perceived dangerousness, we used the Dangerousness Scale (Link et al., 1987), in which participants rate their agreement on a 6-point scale (0 = *Strongly disagree* to 5 = *Strongly agree*) to 8 statements such as "If I know a person has been a mental patient, I will be less likely to trust him." To assess desired social distance, the Social Distance Scale (SDS) was adapted from Link et al. (1987). Its seven questions (e.g., "How would you feel having

someone with a mental disorder as a neighbor?") ask participants about their willingness to interact with a person with a mental disorder in various social contexts. Participants rated their willingness on a 4-point scale (0 = *Definitely unwilling* to 3 = *Definitely willing*). Higher scores on both scales indicate greater stigma.

**Mental Health Experience.** Four items were written to measure whether participants had experienced any psychological problems previously, whether they had sought professional help, and whether their family or friends had experienced any psychological problems. Participants responded to each of these items with a dichotomous "Yes" or "No" response.

**Help-Seeking Attitudes.** These attitudes were measured using the Inventory of Attitudes Toward Seeking Mental Health Services (IASMHS) from Mackenzie et al. (2004). This inventory revised the popular measure Attitudes Toward Seeking Professional Psychological Help scale (ATSPPH; Fischer & Turner, 1970), which had been criticized for its limitations on validity (Fischer & Farina, 1995; Surgenor, 1985). The IASMHS asked participants to rate their agreement with 24 statements (e.g., "It is probably best not to know everything about oneself") on a 5-point scale (0 = *Disagree* to 4 = *Agree*). The scale has three subscales – "psychological openness", "help-seeking propensity", and "indifference to stigma" – but the last was omitted from the present study due to its conceptual overlap with the stigma measures. The IASMHS has a high internal consistency of .86 and a test-retest reliability of .73 (Mackenzie et al., 2004).

### **Procedure**

Similar Prolific recruitment and consent processes described in Study 3 and 4 preceded the Study 5 survey. Participants then completed a battery of measures in a randomized order, including the concept breadth scales, mental health literacy, perceived

dangerousness, desired social distance, mental health experience, and help-seeking attitudes. The same set of demographic questions was asked at the end of the survey. Participants were then debriefed and paid for their time.

## Results

Cronbach's alpha values for the CB-V and CB-H were .78 and .82, respectively, similar to the previous studies. Associations between the scales and most demographic variables were generally consistent with those obtained in Study 4. There were no significant differences by gender – CB-V,  $t(288) = 0.89$ ,  $p = .377$ , CB-H,  $t(288) = 0.55$ ,  $p = .586$  – by race (White vs non-White) – CB-V ( $t(296) = -1.44$ ,  $p = .151$ ), CB-H ( $t(296) = -1.73$ ,  $p = .085$  – or by education level – CB-V,  $F(2, 295) = 1.86$ ,  $p = .157$ , CB-H,  $F(2, 295) = 0.86$ ,  $p = .423$ . As in Study 4, more liberal participants tended to have broader mental health concepts on the CB-H ( $r = -.14$ ,  $p = .018$ ), although no association was obtained for the CB-V ( $r = -.05$ ,  $p = .424$ ). In contrast to Study 4, age was negatively correlated with the CB-V ( $r = -.15$ ,  $p = .009$ ) and CB-H ( $r = -.19$ ,  $p = .001$ ) and there were significant differences amongst the income groups on both the CB-V,  $F(3, 287) = 3.08$ ,  $p = .028$ , and CB-H,  $F(3, 287) = 3.45$ ,  $p = .017$ . Post hoc Tukey HSD tests and Games-Howell tests for multiple comparisons found that CB-V and CB-H scores were higher for participants with annual income < USD\$50,000 than for those with income between USD\$100,000 and USD\$149,999.

Correlations between breadth scales and the mental health variables are presented in Table 9. The correlation between the CB-V and the CB-H scales was significantly positive,  $r = .52$ ,  $p < .001$ . The CB-V scale had significant positive correlations with help-seeking attitudes and all mental health experience items, and a negative correlation with social distance. All of these correlations were small, although the correlation with personal experience of psychological problems was close to a medium effect,  $r = .27$ ,  $p < .001$ . Similar

or stronger correlations were obtained for the CB-H scale, with the exception of a significant negative correlation with dangerousness,  $r = -.17$ ,  $p = .004$ . CB-H significantly correlated with all mental health variables investigated with small to medium effects.

**Table 9**

*Correlations Between Two Concept Breadth Scales and Other Mental Health Variables*

	2	3	4	5	6	7	8	9	10
1. Vertical breadth	.52**	.10	-.09	-.15**	.13*	.27**	.12*	.17**	.18**
2. Horizontal breadth		.20**	-.17**	-.21**	.13*	.32**	.22**	.23**	.25**
3. Mental health literacy			-.44**	-.32**	.26**	.20**	.23**	.18**	.26**
4. Dangerousness				.72**	-.28**	-.17**	-.14*	-.21**	-.32**
5. Social distance					-.26**	-.26**	-.24**	-.22**	-.31**
6. Help-seeking attitudes						.09	.29**	.19**	.21**
7. Personal experience of psychological problems							.70**	.49**	.45**
8. Personal help-seeking experience								.41**	.35**
9. Family's experience of psychological problems									.49**
10. Friends' experience of psychological problems									

*Note.* Pearson correlations were computed for correlations amongst variables 1-5; Point-

Biserial correlations were computed for correlations involving at least one variable 6-9.

\* $p < .05$ ; \*\* $p < .01$



### ***Predictive Validity***

To determine whether the demonstrated bivariate associations between concept breadth and stigma (perceived dangerousness and social distance), help-seeking attitudes, and personal experience variables were independent of mental health literacy, we conducted a series of regression analyses (Table 10) and logistic regression analyses for the dichotomous personal experience measures (Table 11) with each concept breadth scale and mental health literacy as predictors. All models were significant and mental health literacy was associated with lower levels of stigma, more positive help-seeking attitudes, and having personal experience of psychological problems and help-seeking. The concept breadth scales did not independently predict perceived dangerousness or help-seeking attitudes but they both predicted lower levels of social distance. They also predicted having personal experience of psychological problems, and the CB-H scale additionally predicted greater personal experience of help-seeking.

**Table 10**

*Summary of Regression Analyses With Concept Breadth and Mental Health Literacy*

*Predicting Stigma and Help-Seeking Outcomes*

<b>Outcome</b>	<b>MHL B</b>	<b>p</b>	<b>CB-V B</b>	<b>p</b>	<b>CB-H B</b>	<b>p</b>	<b>Model R<sup>2</sup></b>	<b>p</b>
Dangerousness	-1.14	< .001	-0.01	.406	-	-	.195	< .001
Dangerousness	-1.14	< .001	-	-	-0.01	.134	.199	< .001
Social distance	-0.08	< .001	-0.01	.031	-	-	.116	< .001
Social distance	-0.07	< .001	-	-	-0.01	.009	.122	< .001
Help-seeking	0.90	< .001	0.19	.051	-	-	.080	< .001
Help-seeking	0.88	< .001	-	-	0.08	.144	.074	< .001

*Note.* MHL = Mental health literacy.

**Table 11**

*Summary of Logistic Regression Analyses With Concept Breadth and Mental Health Literacy  
Predicting Personal Mental Health Experience Outcomes*

<b>Outcome</b>	<b>MHL B</b>	<b>p</b>	<b>CB-V B</b>	<b>p</b>	<b>CB-H B</b>	<b>p</b>	<b>Model R<sup>2</sup></b>	<b>p</b>
Personal experience	.13	.002	.09	< .001	-	-	.140	< .001
Personal experience	.11	.013	-	-	.06	< .001	.166	< .001
Personal help-seeking	.16	< .001	.03	.076	-	-	.087	< .001
Personal help-seeking	.15	< .001	-	-	.04	.002	.115	< .001

*Note.* MHL = Mental health literacy.

## Discussion

Study 5 extended the previous study by establishing additional associations between the concept breadth measures and other mental health-related variables. Study 5 revealed that concept breadth has modest but consistent associations with measures of stigma, help-seeking attitudes, and personal experiences of mental health problems and seeking help for such problems. Holding broad concepts of mental disorder appears to be associated with desirable attitudes to people experiencing mental health problems and willingness to seek professional help for these problems. It also appears to be associated with greater personal experience with mental ill health. This pattern of associations points to the promise of concept breadth as a factor to consider in understanding, studying, and potentially reducing undesirable mental health-related attitudes. If holding broad or inclusive concepts of mental disorder is correlated with more favourable attitudes, it is possible that promoting such concepts might boost those attitudes. Although evidence for that speculation awaits studies

that move beyond cross-sectional correlations, it opens a new avenue in stigma and help-seeking research.

The Study 5 finding that several associations between concept breadth and other mental health variables are independent of mental health literacy is also important. Mental health literacy is a well-researched construct that is known to be associated with a range of psychological outcomes. Greater knowledge about mental health and illness is associated with lower stigma and greater help-seeking. Our finding that concept breadth continues to predict these variables, and personal experiences, even when mental health literacy is statistically controlled implies that it is capturing a factor that is implicated in mental health-related attitudes and experiences but is distinct from accurate knowledge. Having a more inclusive concept of mental disorder, regardless of the objective accuracy of that concept, may be an important factor in how people think about and respond to it. In addition, consistent findings from Study 4 and 5 that concept breadth has no associations with gender and education level provide further support that it is a distinct concept from other mental health variables that are often associated with gender and education. The consistent finding across Study 4 and 5 that liberals tend to have broader concepts of mental disorder than conservatives may help to explain the political differences in support for public mental health initiatives.

### **General Discussion**

The studies reported here developed and validated new self-report measures of mental disorder concept breadth. This construct resonates with extensive theoretical literature on mental health and psychiatric classification, arising in relation to concerns about diagnostic inflation and “psychiatrization” (Haslam, Tse, et al., 2021), but it had yet to be assessed as an individual difference variable. In addition to enabling empirical research

on variations in concept breadth and their implications, the CB-H and CB-V embody an important distinction between two different sources of variability, identified as horizontal and vertical breadth. The scales therefore allow individual and group differences in mental disorder concept breadth to be evaluated in a differentiated way.

Our studies support the reliability, validity, and promise of the new scales. Their internal consistency was good to very good, their unifactorial structures were supported by exploratory and confirmatory analyses, and they were found to correlate moderately without being redundant, implying that the scales capture unique variance in two forms of concept breadth. The scales converged as predicted with an existing generalized measure of harm concept breadth. They also diverged substantially from two measures of mental health literacy and did not correlate with education levels, supporting the theoretical claim that holding broad concepts of disorder is not merely a sign of more accurate and extensive knowledge of mental health. The CB-H and CB-V correlated negatively with measures of stigma and positively with measures of help-seeking attitudes and personal experience of mental ill health, and several of these associations were independent of mental health literacy, supporting the scales' incremental validity. In sum, we believe the new scales have demonstrated solid psychometric credentials and the potential to illuminate attitudes, beliefs, and behaviors related to mental health.

The existence of reliable and validated measures of mental disorder concept breadth affords a wide range of research opportunities. Several avenues for future research could examine the correlates, determinants, and consequences of holding broad concepts of disorder. We sketch out some of these future research directions below.

With regard to correlates, it will be important to continue the construct validation of mental disorder concept breadth by exploring its associations with other individual

difference variables, including personality traits, attitudes, values, and ideologies. Previous research on generalized harm-related concept breadth has found it to be associated with individual differences in empathy, liberal political orientation, justice sensitivity, endorsement of harm-based morality, and other constructs (McGrath & Haslam, 2020; McGrath et al., 2019). It remains to be seen whether these associations hold for mental disorder-related concept breadth, although Study 4 and 5 found evidence for a positive association between CB-H and liberal political orientation.

Correlations between demographic variables and mental health concept breadth also require further exploration. Previous research has typically found greater harm-related concept breadth among women than men, along with mixed evidence for greater breadth among younger participants (McGrath & Haslam, 2020), but the present research found no gender differences on the new scales and a weak age effect only in Study 5. Given the widespread interest in shifting attitudes towards and rising prevalence of mental ill health, the possibility of age effects, even if they are weak or subtle, is important to investigate.

With regard to determinants, it is important to discover whether particular personal experiences, social environments, or cultural backgrounds influence the breadth of people's concepts of mental disorder. It is possible that direct or indirect personal experiences of mental ill health may broaden the concept, a possibility raised by Study 5's finding of a correlation between these variables. However, that correlation allows no causal inference, and the causal arrow could even be reversed as broad concepts might lead people to identify their problems as disorders. Cultural influences may also be important; for instance, Tse and Haslam (2021) have found preliminary evidence of narrower concept breadth among Asian Americans relative to their White peers. Such cultural differences, which have

received very little empirical attention to date, may have implications for ethnic disparities in stigma and help-seeking, and the new scales provide a means to study them.

The new scales could be employed as outcome measures in experimental studies of experiences or interventions that might broaden or narrow people's disorder concepts. Work by Foulkes and Andrews (2023), for example, speculates that awareness campaigns may inadvertently increase rates of mental disorder, and one mechanism through which they might do so is by vertically inflating (i.e., lowering the threshold of) people's disorder concepts. Exposure to formal education about mental health or to mental health awareness campaigns may broaden people's concepts of mental disorder. Although the minimal correlation between mental disorder concept breadth and mental health literacy obtained in Studies 2 and 3 implies that concept breadth should not be confused with greater or more accurate knowledge, mental health literacy could still be a possible mechanism for influencing concept breadth or vice versa. Understanding the differing correlates, determinants, and mechanisms of mental disorder concept breadth and mental health literacy is a priority for future research.

On the subject of consequences, the new scales could be used to examine the possible effects of mental disorder concept breadth on other mental health-related phenomena. Study 5's findings suggest that holding broader concepts is beneficial for improving attitudes and promoting help-seeking, but whether concept breadth plays a causal role and the mechanisms through which it might do so remain to be established. Broader concepts may reduce stigma by supporting the view that mental disorder is common and on a continuum with normality and it may increase help-seeking by the same mechanism or by increasing the likelihood that people believe they have a disorder. Equally, broad disorder concepts may have less beneficial consequences. Consistent with Foulkes

and King's (Foulkes & Andrews, 2023) argument, broad concepts might dispose people to make false positive self-diagnoses, which may have problematic implications via self-fulfilling prophecy effects. These possibilities await future research, which the new scales might enable.

While this series of studies established and illustrated the new concept breadth scales and their associations, these studies were not without limitations. Although care was taken to create a diverse set of vignettes for the purposes of scale construction, that set was inevitably incomplete. Although the short form of the vertical breadth scale (CB-V-S) demonstrated a unidimensional structure, good internal consistency, and strong convergence with the CB-V, further research using the CB-V-S as a standalone measure is needed to validate it. The cross-sectional design of the studies, particularly in Study 5, did not allow causal inferences about links between concept breadth and other variables to be made. While concept breadth was shown to significantly predict social distance and personal experience of psychological problems and help-seeking, it was likely that the relationships between these variables are reversed in direction or even more likely to be bidirectional. Future experimental or longitudinal studies utilising these scales could help to clarify the nature of these associations.

## **Conclusions**

The CB-H and CB-V scales offer researchers an opportunity to explore new questions in mental health research. Debates about the boundaries of the concept of mental disorder have primarily been abstract and philosophical to date, but the scales provide a way to study variations in the placement of these boundaries between individuals and groups. At a time when concerns over diagnostic inflation, the psychiatrization of everyday life problems, and the rising prevalence of mental ill health are urgent, we believe it is important to

investigate the causes, correlates, and consequences of the breadth of people's concepts of mental disorder. Mental disorder concept breadth is a construct that complements existing research on mental health literacy and may offer new insights into laypeople's mental health-related attitudes, beliefs, and behaviors.



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## Chapter 4 (Studies 6-7): Potential Mechanisms Explaining Disparities in the Breadth of the Concept of Mental Disorder Between Asians and Whites

It is indisputable that there are racial and cultural differences in people's conceptualisation and interpretation of mental disorder (Chentsova-Dutton & Ryder, 2020; Kleinman & Kleinman, 1987; Parker et al., 2005). These differences have been studied extensively in the fields of cultural psychiatry and cultural-clinical psychology (Karasz, 2005; Kirmayer, 2005; Ryder et al., 2011), and are reflected in numerous culture-bound syndromes and idioms of distress (Nichter, 2010), such as *dhat* and *shenjing shuairuo* (Kohrt et al., 2014). Many researchers have studied these conditions separately, generally using qualitative methods, but very few studies have investigated them quantitatively and focused holistically on the concept of mental disorder itself. Even less is known about the reasons for cultural differences in these concepts of disorder. Understanding what is driving these differences has important implications for developing more culturally sensitive mental health communications and treatments, particularly for ethnic minorities living in cultures with mental health care systems that are geared to the dominant culture.

Asian ethnic groups are noteworthy in this regard. According to the United Nations, the population in Asia makes up 59.22% of the world's population, and it is on the rise (United Nations, 2022). An increasing number of Asians have migrated to Western, White-majority countries, such as the United States and Australia. For instance, the ethnically Asian population of the United States of America is predicted to double from 5% in 2004 to 10% of the population by 2050 (U.S. Bureau of the Census, 2004) and the Asia-born population in Australia increased from 4% of the overseas-born population in 1971 to 39% in 2016 (Australian Bureau of Statistics, 2014, 2019). Although Asians are a heterogeneous group encompassing many diverse cultures, investigating broad discrepancies between Asian and

White majority populations is important because substantial differences in mental health-related beliefs, attitudes, and behaviours have been demonstrated (e.g., Barry & Grilo, 2002; Tse & Haslam, 2021; Zhang et al., 1998). While broad ethnic groupings like “Asian American” may risk obscuring cultural variation and nuance within groups, they can serve as a practical foundation for identifying broad patterns between groups. The focus of the current research is therefore not to assume cultural homogeneity within the Asian or White groups, but to examine whether these general cultural patterns may account for variations in concept breadth and to explore potential mechanisms underlying these differences. Understanding the nature and determinants of differences in how these groups conceptualise mental disorder is essential for improving mental health through more culturally informed approaches.

Racial or cultural differences in broad concepts of mental disorder have been examined theoretically and empirically. Theoretically, the fact that mental disorder is a complicated, contested, and fuzzy concept makes such differences unsurprising. People often attribute abnormal behaviours to mental disorder, and because the norms used to judge abnormality may be culture-specific, these attributions are likely to vary. This issue is discussed in various cultural models proposed to understand variations in concepts of normalcy and deviancy (Chentsova-Dutton & Ryder, 2020). However, only a handful of empirical studies have directly explored cultural differences in the content or expansiveness of concepts of mental disorder. Giosan et al. (2001) asked participants in the United States, Brazil, and Romania to judge whether people described in 68 vignettes (representing 47 *DSM-IV* disorders and 21 non-*DSM-IV* conditions) had a mental disorder. They found that Americans had the broadest concepts of disorder, considering a wider range of vignettes to exemplify mental disorder, followed by Romanians and Brazilians. Glovsky and Haslam



(2003) found evidence supporting the cultural basis of these discrepancies, showing that Brazilians living in the USA held broader concepts of mental disorder if they had higher levels of American acculturation. A more recent study by Tse and Haslam (2021) found that Asian Americans had significantly narrower concepts of mental disorder than their White counterparts. Together, these studies support the existence of cross-cultural discrepancies in concepts of mental disorder across a range of groups and research methods. However, they provide a limited understanding of why these discrepancies exist. Understanding the factors that underpin cultural differences in the expansiveness of concepts of disorder should help to clarify their basis.

The recent development of two scales for measuring the breadth of concepts of mental disorder provides an avenue to advance this line of research (Tse & Haslam, 2023a [Thesis Studies 2-5]). *Concept breadth* is defined as the expansiveness of concepts of mental disorder: the range of phenomena that the person considers to be mental disorders. It is theorized to have two dimensions, representing differences in the range of phenomena viewed as disorders (horizontal breadth) and the severity threshold at which a phenomenon becomes seen as disordered (vertical breadth). People may have broad concepts of disorder by seeing a diverse assortment of conditions as disorders and by having a low threshold (i.e., low level of symptom severity or functional impairment) for determining when someone is disordered. Prior research (i.e., Giosan et al., 2001; Glovsky & Haslam, 2003; Haslam & Giosan, 2002; Tse & Haslam, 2021) has provided initial support for ethnic and cultural variations in the horizontal breadth of disorder concepts but variations in vertical breadth may also exist. For example, members of a cultural group might have a vertically narrow concept of disorder if they are reluctant to identify people as having mental health problems due to stigma or if their understanding of mental disorder is limited to severe psychotic

conditions. Investigating the factors that underpin racial or cultural differences in the breadth of the concept of mental disorder would help to provide culturally tailored mental health messages and treatments for different racial groups to maximise impact.

The aims of the research reported in this chapter were two-fold. First, it aimed to replicate the differences in the breadth of mental disorder between racial groups, specifically between Asian and White participants, as found in Tse and Haslam's (2021) study. Second, it aimed to identify factors that may explain the differences in concept breadth between the two racial groups. To ensure the robustness of the effect, two studies were conducted in two countries with different sample characteristics. Study 6 recruited adults in the United States of America, where Asian Americans may exhibit higher levels of acculturation due to their long history of migration, potentially resulting in smaller cultural differences between the two participant groups. Study 7 focused on young adults at an Australian university, where the participants would be younger in age overall and also the Asian cohort included international students who may be less acculturated, thereby allowing for the observation of larger cultural differences. To our knowledge, no previous research has investigated the underlying mechanisms of these conceptual differences and therefore, a range of candidate factors were included and tested in two studies with different sample populations.

### **Study 6**

#### **Potential Factors Underpinning the Relationship Between Race and Concept Breadth**

Study 6 investigated four factors that might account for the expected Asian-White difference in concept breadth. These four factors are continuum beliefs, individualism and collectivism, social distance, and somatosensory amplification. Each of these factors is briefly outlined below.

### ***Continuum Beliefs***

There is a long-standing debate on the categorical versus continuous or dimensional nature of mental disorder, with a recent trend towards official recognition of the continuum view. This shift has had an impact on psychiatric diagnosis, with the American Psychiatric Association's DSM classification adopting more dimensional features (Haslam et al., 2012; Markon et al., 2011). In addition, researchers have begun to study the correlates of holding *continuum beliefs* among laypeople and their impact on mental health-related attitudes (Schlier et al., 2016). Research on continuum beliefs is still in its early stage, but it has shown promising negative associations with mental illness stigma (Buckwitz et al., 2021; Dave & O'Connor, 2022; Peter et al., 2021), although evidence for the effectiveness of continuum beliefs interventions has been mixed (Buckwitz et al., 2022; Buckwitz et al., 2021; Peter et al., 2021).

Very limited research has been conducted on the sociodemographic correlates of continuum beliefs (Dave & O'Connor, 2022), particularly on any racial or cultural differences. While no study to date directly compared the prevalence of continuum beliefs between Asian and White people, there are indirect comparisons that may provide some preliminary support for such a relationship. Subramaniam et al. (2017) compared the prevalence of continuum beliefs about depression and schizophrenia among Asian participants in Singapore (57.9% and 32.7%) to those in nationally representative samples in France (58.2% and 28.5%; Angermeyer et al., 2015) and Germany (42.1% and 26.0%; Schomerus et al., 2013), where the Asian participants were equally or more likely to hold continuum beliefs than the European groups. However, the vignettes used in these three studies were not identical, so no direction comparisons can be made. This Asian population may therefore

endorse a relatively continuous model of mental disorder while also tending to consider it as a taboo topic (Tan et al., 2020).

### ***Individualism and Collectivism***

There are many approaches in studying the role of culture in relation to mental health and illness. For example, a qualitative ethnographic approach has been taken towards culture-bound syndromes, showing how they are meaningful in specific cultural contexts. However, a quantitative approach would be more useful in looking at cultural differences in the broad concept of mental disorder as a whole. Of the possible quantitative approaches, the cultural dimension of individualism-collectivism has been shown to be a useful approach for investigating cultural comparisons. Individualism emphasises autonomy and independent selves, whereas collectivism underscores group norms and interdependent goals and cooperation (Hofstede, 1984; Triandis & Gelfand, 1998). These two orientations are relatively broad and not mutually exclusive (Rhee et al., 1996; Sinha & Tripathi, 1994), and research suggests they differentiate some Asian and non-Asian groups. For instance, a meta-analysis of 50 studies by Oyserman et al. (2002) concluded that European Americans were significantly more individualistic and less collectivistic than Asian Americans and participants in Asian countries.

In contrast to collectivistic cultures, White people with a more individualistic orientation are more likely to acknowledge personal distress, even if it does not affect group harmony. Conversely, Asians, who are higher on collectivism, may consider emotional symptoms and conditions that do not impair individuals' ability to function in their social roles insignificant, and thus, minimise or ignore these conditions. While all mental disorders directly affect individuals, some have relatively minor direct adverse impacts on the people

around them. This contributes to Asians potentially holding narrower concepts of mental disorder, particularly along the horizontal dimension.

Moreover, Asians with a collectivistic orientation place a high value on face-saving and maintaining social harmony (Zane & Yeh, 2002). Since mental disorder is heavily stigmatised in Asian cultures (Masuda & Boone, 2011; Ng, 1997), labelling someone as having a mental disorder could be considered a serious accusation. Particularly, identifying themselves or people related to them as having a mental disorder would threaten their personal and familial face, hence harming their social standing. Furthermore, such acknowledgement or identification may be construed as selfish or problematic since it threatens the stability of groups. Consequently, Asians may be less likely to label themselves or others as having a mental disorder unless the condition is very severe. The tendency to minimise and avoid acknowledging these symptoms unless they reach a high severity threshold suggests that they would have narrower vertical concepts of mental disorder. Therefore, it is expected that Asians, compared to their White peers, might consider fewer conditions as mental disorders and judge phenomena to be disorders only at a relatively high severity threshold, reflecting a narrower concept.

### ***Stigma – Social Distance***

Stigma, defined as a social process that disqualifies people from being socially accepted (Goffman, 2009), is a very well-established construct in the mental health field and shows consistent ethnic differences (Anglin et al., 2006; Corrigan et al., 2004; Eisenberg et al., 2009; Griffiths et al., 2006; Narrow et al., 2000). Asian Americans reported a higher level of stigma in terms of social distance than White Americans (Griffiths et al., 2006; Rao et al., 2007), a difference commonly suggested to be rooted in concerns about preserving face and bringing shame to the family (Gee et al., 2020; Jimenez et al., 2013; Yang et al., 2008; Yang et

al., 2013). Face – defined as one’s social reputation – is an important ethnic-cultural variable for Asians, particularly East Asians. The loss of face or the threat of it is a form of humiliation that exemplified the physical and affective experience of stigma. (Kleinman & Kleinman, 1993; Leong et al., 2011; Yang et al., 2008). In order to avoid losing face and stigma, Asians may normalise psychological distress and impairments they see in themselves, their family, or their ingroups, and therefore, judge relatively few people experiencing distress or impairment as having mental disorders.

### ***Somatosensory Amplification***

One prominent finding of cultural psychiatry is that Asian populations tend to describe experiences of mental disorder with somatic symptoms, compared to their White counterparts who tend to describe psychological symptoms (Nikelly, 1988; Ryder & Chentsova-Dutton, 2012; Tsai et al., 2004). For instance, *shenjing shuairuo*, a Chinese diagnostic category, is a disorder similar to major depressive disorder but with an emphasis on somatic symptoms, such as physical fatigue (Ryder & Chentsova-Dutton, 2012). Kleinman (1982) found that 87% of 100 neurasthenia patients in a Chinese psychiatric clinic suffered some form of depressive disorder and that somatic symptoms were the most commonly reported symptoms, whereas depressed mood was not frequently reported. Similarly, *dhat*, an Indian psychiatric syndrome, is represented by prominent weakness and fatigue where the perceived cause is a loss of semen (Raguram et al., 1994). One potential reason for Asians’ somatic manifestation of psychological distress could be somatosensory amplification (Grover & Ghosh, 2014), which refers to the tendency to experience somatic and visceral sensations intensely to the extent that these bodily sensations become disturbing. Indeed, Ishii (2018) compared somatosensory amplification data between 1052 Americans and 1027 Japanese in two large-scale surveys and found that Japanese had

significantly stronger somatosensory amplification than Americans. It is possible that Asians experiencing psychological problems feel stronger and are more aware of the somatosensory symptoms, leading them to believe they are signs of physical diseases rather than mental disorders, and therefore, have a narrower concept of mental disorder.

The four factors discussed above – continuum beliefs, individualism-collectivism, stigma (social distance), and somatosensory amplification—are candidates to explain differences in concepts of mental disorder between racial groups. Based on the above rationales for each factor, we proposed the following hypotheses.

H<sub>1</sub>: The relationship between racial groups (Asian and White Americans) and horizontal breadth is mediated by: continuum beliefs (H<sub>1a</sub>); individualism and collectivism (H<sub>1b</sub>); social distance (H<sub>1c</sub>); and somatosensory amplification (H<sub>1d</sub>).

H<sub>2</sub>: The relationship between racial groups (Asian and White Americans) and vertical breadth is mediated by: continuum beliefs (H<sub>2a</sub>); individualism and collectivism (H<sub>2b</sub>); social distance (H<sub>2c</sub>); and somatosensory amplification (H<sub>2d</sub>).

## **Method**

### ***Participants***

Utilising a Monte Carlo power analysis for mediation analysis as proposed by Schoemann et al. (2017), the minimum sample size was determined to be 317 to detect a small effect size with 80% power at an alpha level of 0.05. A total of 415 participants (207 Asian Americans and 209 White Americans) took part in the survey. Asian participants were grouped from those who self-selected to identify with either “Chinese”, “Filipino”, “Asian Indian”, “Vietnamese”, “Korean”, “Japanese”, or “Other Asian”. Fifteen participants (seven Asian Americans and eight White Americans) were excluded due to failing two or more attention check questions. The final analysis was performed on a sample of 401 participants,

including 196 Asian Americans and 201 White Americans. The demographic characteristics of the two subsamples are detailed in Table 12.

**Table 12**

*Demographic Characteristics of Asian and White American Subsamples*

	Asian American ( <i>n</i> = 196)	White American ( <i>n</i> = 201)
Age		
Range	18 – 60	18 – 75
Mean (SD)	31.19 (9.39)	40.30 (12.73)
Gender		
Men	98 (50.00%)	99 (49.25%)
Women	93 (47.45%)	98 (48.76%)
Other	1 (0.51%)	3 (1.49%)
Prefer not to say	4 (2.04%)	1 (0.50%)
Education		
High school graduate	14 (7.14%)	27 (13.43%)
Some college but no degree	27 (13.78%)	44 (21.89%)
Associate degree	12 (6.12%)	31 (15.42%)
Bachelor's degree	93 (47.45%)	68 (33.83%)
Above Bachelor's degree	50 (25.51%)	31 (15.42%)
Income (USD)		
Less than \$50000	83 (42.35%)	105 (52.24%)
\$50000-\$99999	71 (36.22%)	62 (30.85%)
\$100000-\$149999	17 (8.67%)	20 (9.95%)
\$150000 or more	16 (8.16%)	8 (3.98%)
Prefer not to say	9 (4.59%)	6 (2.99%)
Years living in the United States of America		
Mean (SD)	24.16 (11.46)	39.58 (12.56)



## **Materials**

**Vertical Breadth of Mental Disorder (CB-V; Tse & Haslam, 2023a [Thesis Studies 2-5]).** This 7-item scale measures the vertical breadth of the mental disorder concept. Each item contained five descriptions of a person whose mental health problems are described in descending order of severity. An example item can be found in Appendix A. Participants responded to each description with a dichotomous “yes” (1 score) and “no” (0 score) to the statement “This person has a mental disorder”. A higher score indicates greater vertical breadth. In Tse and Haslam’s (2023a [Thesis Studies 2-5]) study, it had a good internal consistency of  $\alpha = .79$ .

**Horizontal Breadth of Mental Disorder (CB-H; Tse & Haslam, 2023a [Thesis Studies 2-5]).** This 15-item scale measures the horizontal breadth of the mental disorder concept. After reading a description of a person’s situation, participants rate their extent of agreement on a 6-point Likert scale (1 = *Strongly disagree* to 6 = *Strongly agree*) to the statement “This person has a mental disorder”. A higher score indicates greater horizontal breadth. An example item is in Appendix C. It demonstrated a very good internal consistency of  $\alpha = .82$  in Tse and Haslam (2023a [Thesis Studies 2-5]).

**Continuum Beliefs.** The continuum belief scale was adapted from Schomerus et al. (2016) by replacing the original vignette with three of the CB-H descriptions (persistent depressive disorder, somatic symptom disorder, and narcissistic personality disorder) and “Anne” with “this person”. There are seven items in the scale (each repeated for the three disorder descriptions), representing two factors, continuity beliefs (items 1–4) and fundamental differentness (items 5–7). Participants rate their agreement to items on a 5-point Likert scale (1 = *Don't agree at all* to 5 = *Agree completely*). Example items for continuity beliefs and fundamental differentness factors are “Sometimes we are all at least

a little like this person, it is only the question how pronounced this state is” and “This person is in a state of mind that normal persons simply cannot understand”, respectively. An average of each factor across the three descriptions was computed. Higher continuity beliefs and fundamental differences scores indicate a stronger belief in the continuum nature of the described disorders and a stronger belief that those with the described disorders are fundamentally different from others without the disorders, respectively. The original sets of items showed acceptable internal consistency of  $\alpha = .74$  and  $.70$  (Schomerus et al., 2016).

**Individualism and Collectivism Scale (Triandis & Gelfand, 1998).** This 16-item scale measures the two dimensions of cultural orientation. The two subscales, each containing eight items, measure individualism (e.g., “I often do ‘my own thing.’”) and collectivism (e.g., “Parents and children must stay together as much as possible.”). Participants rate whether the statements represent themselves on a 9-point Likert scale (1 = *Never or definitely no* to 9 = *Always or definitely yes*). A higher score on any subscale indicates a stronger personal endorsement of each cultural orientation.

**Social Distance.** The 7-item scale measures unwillingness to socially interact with people with mental illness. It was adapted from the Social Distance Scale (SDS; Link et al., 1987) where no vignette was presented, and the name “Anne” was replaced by “someone with mental illness”. Participants rate their agreement on a 4-point Likert scale (0 = *Definitely willing* to 3 = *Definitely unwilling*) to questions like “How would you feel having someone with mental illness as a neighbour?” A higher score indicates a stronger desire to be socially distant from people with mental illness.

**Somatosensory Amplification Scale (SSAS; Barsky et al., 1990).** This 10-item scale measures the extent of being bothered by somatic sensations. Participants rate their extent

of agreement on a 5-point Likert scale (1 = *Strongly disagree* to 5 = *Strongly agree*) to statements such as “I hate to be too hot or too cold.” The scale had a good internal consistency of  $\alpha = .82$  and test-retest reliability of  $r = .79$ . A higher score indicates more troubled by somatic sensations.

**Mental Health Experience.** The four mental health experience items were adapted from Miles et al. (2020), and similarly used in Tse and Haslam (2023a [Thesis Studies 2-5]). The four items concerned whether participants had experienced psychological problems (item 1) and sought professional help (item 2), and whether their family (item 3) or friends (item 4) had experienced psychological problems. Participants responded with a dichotomous “yes” or “no”.

### ***Procedure***

This study was approved by the Human Research Ethics Committee of the University of Melbourne. The study listing was created and listed on the Prolific platform. Interested and eligible (based on balance samples of race) prolific users were redirected to the Qualtrics survey platform, where they were shown a Plain Language Statement and gave their consent to participate. Participants then filled in a battery of measures including CB-V, CB-H, continuum beliefs, individualism and collectivism Scale, SDS, and SSAS in randomised order. Participants then responded to mental health experiences and demographic questions (age, gender, race, education, income, political orientation, years living in the United States, first language, and English proficiency). Finally, they were debriefed and paid.

### ***Statistical Analysis***

All statistical analyses were conducted using the SPSS software version 28 and PROCESS macro (Hayes, 2013). Hypotheses were tested using bias-corrected bootstrapping

mediation analyses, which is considered a powerful analysis to detect the mediation effect (Memon et al., 2018).

## Results

### *Descriptive Statistics*

The reliability estimates, means, and standard deviations for each measure of the total sample, as well as by racial group are presented in Table 13. All measures except the continuum belief measure achieved acceptable internal consistency with Cronbach's alpha values > .60 in the total sample, as well as across racial groups. The two subscales of the continuum beliefs measure had low internal consistency indicated by alpha values ranging from .32 to .58. However, this is expected as the measure was assessed using three different disorder vignettes where participants would hold varying continuum beliefs towards, as studies had shown that symptoms continuity was the highest for depression, followed by alcohol dependence, and lastly by schizophrenia (Angermeyer et al., 2015; Schomerus et al., 2013).

**Table 13**

#### *Reliability Estimates and Descriptive Statistics of All Measures*

Measures	Total (N = 397)		Asian (n = 196)		White (n = 201)	
	$\alpha$	Mean (SD)	$\alpha$	Mean (SD)	$\alpha$	Mean (SD)
Vertical breadth	.79	22.34 (6.70)	.80	21.83 (6.56)	.78	22.84 (6.81)
Horizontal breadth	.83	52.85 (11.15)	.81	53.58 (10.33)	.85	52.13 (11.87)
Continuum beliefs						
Continuity beliefs	.40	11.10 (2.25)	.48	11.30 (2.27)	.32	10.89 (2.24)
Fundamental difference	.46	6.08 (1.98)	.58	5.99 (2.04)	.33	6.12 (1.90)
Individualism and collectivism						
Individualism	.70	26.97 (3.91)	.72	26.66 (4.14)	.69	27.28 (3.65)
Collectivism	.81	21.76 (5.32)	.83	21.88 (5.23)	.79	21.65 (5.41)
Social distance	.91	1.52 (0.70)	.92	1.67 (0.67)	.90	1.38 (0.71)

Somatosensory amplification	.70	3.07 (0.58)	.69	3.08 (0.54)	.72	3.07 (0.62)
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### ***Interrelationships Between Variables***

Correlations among variables within the total sample and within the two racial groups are presented in Tables 14 and 15, respectively. In the total sample, horizontal and vertical breadth significantly correlated with all other variables (continuum beliefs, social distance, somatosensory amplification, and all four mental health experience variables), except that horizontal breadth did not correlate with individualism or collectivism. These correlations were of small magnitude, ranging from  $r = .11$  to  $.28$ . These patterns were similar for the White American subsample, except vertical breadth did not correlate with collectivism ( $r = -.11$ ,  $p = .11$ ) and horizontal breadth did not correlate with social distance ( $r = -.13$ ,  $p = .08$ ). Similarly, the significant correlations were small,  $r = .14$ – $.28$ . For the Asian American subsample, patterns emerged quite differently. Both vertical and horizontal breadth correlated with social distance ( $r = -.16$ ,  $p = .03$  and  $r = -.19$ ,  $p = .01$ , respectively) and all of the mental health experience variables ( $r = .23$ – $.32$  and  $r = .16$ – $.33$ ). In addition, vertical breadth also correlated with collectivism ( $r = -.14$ ,  $p = .048$ ) and horizontal breadth correlated with fundamental differences ( $r = .30$ ,  $p < .001$ ). These correlations were of small to medium magnitude.

**Table 14***Correlations Between All Variables*

	1	2	3	4	5	6	7	8	9	10	11	12
1. Vertical breadth		.50**	-.13*	.16**	.10*	-.13*	-.16**	.16**	.26**	.24**	.25**	.23**
2. Horizontal breadth			-.19**	.28**	.06	-.06	-.14**	.17**	.28**	.25**	.15**	.23**
3. Continuity beliefs				-.34**	.05	.11*	-.02	.01	.06	-.02	.01	.10*
4. Fundamental difference					.16**	.15**	.09	.08	.08	.10*	.05	.09
5. Individualism						.38**	.05	.15*	-.03	-.01	.04	.07
6. Collectivism							.39**	.18**	-.12*	-.14**	-.14**	-.12*
7. Social distance								.02	-.30**	-.28**	-.24**	-.30**
8. Somatosensory amplification									.13**	.12*	.15**	.09
9. Personal experience of psychological problems										.76**	.50**	.38**
10. Personal help-seeking experience											.41**	.32**
11. Family's experience of psychological problems												.49**
12. Friends' experience of psychological problems												

\* $p < .05$  \*\* $p < .01$

**Table 15***Correlations Between All Variables by Racial Groups*

	1	2	3	4	5	6	7	8	9	10	11	12
1. Vertical breadth		.47**	-.27**	.20**	.19**	-.11	-.14*	.25**	.19**	.23**	.26**	.18*
2. Horizontal breadth	.55**		-.27**	.28**	.01	-.04	-.13	.21**	.27**	.23**	.18**	.18**
3. Continuity beliefs	.04	-.12		-.31**	.09	.06	-.01	-.08	.07	-.02	.01	.07
4. Fundamental difference	.12	.30**	-.37**		.06	.22**	.11	.22**	.10	.09	.08	.07
5. Individualism	.00	.12	.11	.21**		.31**	.03	.16*	-.13	-.06	-.03	.02
6. Collectivism	-.14*	-.08	.13	.12	.45**		.40**	.15*	-.11	-.14	-.16*	-.09
7. Social distance	-.16*	-.19**	-.08	.09	.11	.39**		.03	-.29**	-.25**	-.22**	-.22**
8. Somatosensory amplification	.05	.12	.12	-.08	.14*	.22**	.01		.13	.02	.14	.07
9. Personal experience of psychological problems	.32**	.33**	.07	.06	.03	-.12	-.27**	.15*		.79**	.50**	.35**
10. Personal help-seeking experience	.23**	.33**	.02	.11	.02	-.14*	-.26**	.08	.72**		.44**	.30**
11. Family's experience of psychological problems	.23**	.16*	.05	.01	.07	-.13	-.20**	.17*	.47**	.33**		.51**
12. Friends' experience of psychological problems	.27**	.29**	.16*	.11	.09	-.15*	-.35**	.12	.40**	.31**	.45**	

*Note.* Correlations above and below the diagonal correspond to the White American ( $n = 201$ ) and Asian American ( $n = 196$ ) subsamples, respectively.

\* $p < .05$  \*\* $p < .01$

### ***Relationships Between Race and Concept Breadth***

Independent sample *t*-tests were conducted to compare Asian and White Americans on vertical breadth and horizontal breadth. For the *t*-test on vertical breadth, the assumption of equal variances was met based on the non-significant result of the Levene's Test,  $F = 0.12$ ,  $p = .73$ . There were no significant differences in vertical breadth between the two groups,  $t(395) = 1.50$ ,  $p = .07$ , 95% CI [-0.31, 2.33]. For the horizontal breadth, the assumption of equal variance was also met,  $F = 2.57$ ,  $p = .11$ ; and there was no significant difference between the two groups,  $t(395) = -1.30$ ,  $p = .10$ , 95% CI [-3.65, 0.75].

### ***Mediating Effect on the Relationship Between Race and Concept Breadth***

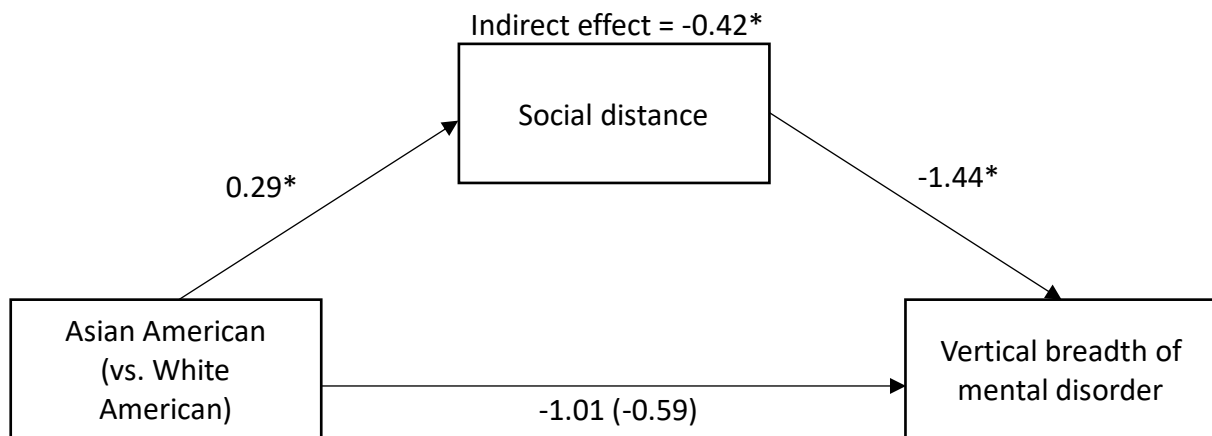
Although there were no significant differences in concept breadth between races, such a relationship is not required for mediation analyses (Hayes, 2009; Judd & Kenny, 1981; Rungtusanatham et al., 2014). Therefore, mediation analyses were conducted as planned. Prior to conducting the mediation analyses, violations of assumptions were checked following recommendations made by Kane and Ashbaugh (2017) and Tabachnick and Fidell (2007). The residual scatterplots and Q-Q plots indicated that the assumptions of linearity, homoscedasticity, normality of estimation error, and independence of observation were met for all relationships between variables in all mediation models.

Mediation analyses were conducted with continuum belief, fundamental difference, individualism, collectivism, social distance, and somatosensory amplification as separate mediators between race and vertical or horizontal breadth. Only the model with social distance as the mediator and vertical breadth as the outcome was significant, and the model is illustrated in Figure 3. Asian Americans reported higher levels of social distance towards people with mental disorder,  $B = 0.29$ ,  $p < .001$ , 95% CI [0.16, 0.43], and higher level of social distance was related to narrower vertical concepts of mental disorder,  $B = -$



1.44,  $p = .003$ , 95% CI [-2.39, -0.48]. The total ( $B = -1.01$ ,  $p = .13$ , 95% CI [-2.33, 0.31]) and direct effect ( $B = -0.59$ ,  $p = .39$ , 95% CI [-1.93, 0.75]) of this mediation model were non-significant. However, there was a significant indirect effect of social distance on the relationship between race and vertical breadth of mental disorder,  $B = -0.42$ , 95% CI [-0.83, -0.10], therefore supporting hypothesis H<sub>2c</sub>.

Since there were racial differences in age and political orientation, as well as previous literature showing there were age and political orientation effects on the breadth of mental disorder concepts (Tse & Haslam, 2023a [Thesis Studies 2-5]), these variables were included as covariates in the mediation model to test the robustness of social distance as the mediator. When controlling for the covariates (age and political orientation), similar results were obtained and the indirect effect of social distance remained significant,  $B = -0.60$ , 95% CI [-1.18, -0.07].

**Figure 3***Mediation Model With Social Distance as the Mediator*

*Note.* Unstandardised regression coefficients for the relationship between race (Asian American:  $n = 196$ ; White American:  $n = 201$ ) and vertical breadth of mental disorder as mediated by social distance. The unstandardised regression coefficient between race and vertical breadth controlling for social distance is in parentheses. The indirect effect of social distance on the relationship was obtained from bootstrap analyses ( $n = 10000$ ).

\* $p < .05$

All other mediation models (using continuity belief, individualism and collectivism, and somatosensory amplification as mediators) were not significant. Therefore, hypotheses 1a-d, 2a, 2b, and 2d were not supported. The respective indirect effects are reported in Table 16 below.

**Table 16**

*Summary of Indirect Effect of Each Mediator for Concept Breadth Controlling for Age and Political Orientation (N = 397)*

Mediator	Outcome: Vertical breadth			Outcome: Horizontal breadth		
	<i>B</i>	<i>SE</i>	95% CI	<i>B</i>	<i>SE</i>	95% CI
Continuity belief	-0.15	0.12	[-0.42, 0.04]	-0.43	0.25	[-0.95, 0.02]
Fundamental difference	-0.03	0.13	[-0.30, 0.24]	-0.09	0.39	[-0.87, 0.67]
Individualism	-0.10	0.09	[-0.32, 0.03]	-0.11	0.12	[-0.42, 0.07]
Collectivism	-0.04	0.09	[-0.23, 0.15]	-0.03	0.09	[-0.25, 0.15]
Social distance	-0.59	0.28	[-1.18, -0.07]	-0.06	0.04	[-0.14, 0.01]
Somatosensory amplification	-0.0008	0.02	[-0.04, 0.04]	-0.01	0.21	[-0.40, 0.48]

### Study 7

To investigate the robustness of racial differences in concept breadth, Study 7 drew on a different sample from the university student population in Australia. Furthermore, two additional candidate factors (i.e., distress tolerance and perceived dangerousness), as well as a subset of the factors tested in Study 6 (i.e., continuum belief and somatosensory amplification), were included in Study 7 to test potential mediators of a racial difference in concept breadth. The two additional factors are detailed below.

### Additional Potential Factors Underpinning the Relationship Between Race and Concept Breadth

#### *Distress Tolerance*

Distress tolerance refers to the capacity to experience and withstand negative psychological states (Simons & Gaher, 2005). To date, no study has directly compared Asian and White samples on distress tolerance. However, speculation could be drawn from findings of an inversely related construct, psychological inflexibility and experiential

avoidance. Masuda et al. (2014) found that Asian Americans had the highest mean score of psychological inflexibility/experiential avoidance compared to other ethnic groups, although these differences were not at a significant level except when compared to Hispanics.

Similarly, Asian Americans demonstrated an unwillingness to face difficult psychological situations and they were also less able to focus on their environment in those instances (Masuda et al., 2014). It is therefore likely that Asians would have lower distress tolerance.

A higher distress tolerance has also been shown to correlate highly with experiencing less psychological distress empirically (Saleem et al., 2021). People who experience less distress or define fewer experiences as distressing may have a relatively high threshold for defining psychological problems as disorders.

### ***Stigma – Perceived Dangerousness***

Perceived dangerousness of people experiencing mental ill health is an important dimension of stigma (Jorm et al., 2012; Link et al., 1989). Individuals with mental disorder are commonly misperceived as dangerous and violent (Jorm et al., 2012; Pescosolido et al., 1999), contributing prominently to the desire to socially distance from such individuals (Marie & Miles, 2008). Stigma has been described as a multi-faceted construct entailing attitude, belief, and behaviours (Sowislo, Lange, et al., 2017). While social distance measures behavioural intentions, perceived dangerousness taps into people's attitudes that may lead to the desire for social distancing. Empirically, dangerousness and social distance yielded similar findings—Asian participants perceived people with mental disorder as more dangerous compared to White participants (Rao et al., 2007; Whaley, 1997). Therefore, it is the intention of Study 7 to test if dangerousness is another component of stigma that might account for a racial difference in concept breadth.

Similar to Study 6, two hypotheses were proposed testing different factors, one for vertical breadth and one for horizontal breadth.

H<sub>3</sub>: The relationship between racial groups (Asian and White participants) and vertical breadth is mediated by: continuum beliefs (H<sub>3a</sub>); perceived dangerousness (H<sub>3b</sub>); distress tolerance (H<sub>3c</sub>); and somatosensory amplification (H<sub>3d</sub>).

H<sub>4</sub>: The relationship between racial groups (Asian and White participants) and horizontal breadth is mediated by: continuum beliefs (H<sub>4a</sub>); perceived dangerousness (H<sub>4b</sub>); distress tolerance (H<sub>4c</sub>); and somatosensory amplification (H<sub>4d</sub>).

## **Method**

### ***Participants***

Participants were psychology students recruited from a university in Australia. A total of 483 participants completed the survey, which satisfied the minimum sample size as detailed in Study 6. Participants self-selected their cultural background to be either “South-East Asian (Mainland South-East Asian, Maritime South-East Asian)”, “North-East Asian (Chinese Asian, Other North-East Asian)”, or “Southern and Central Asian (Southern Asian, Central Asian)” were classified as Asians. Twenty-six did not meet the inclusion criteria of being either Asian or White and 68 participants (55 Asian participants and 13 White participants) were excluded due to failing three or more attention check questions. Upon checking assumptions for mediation analysis, five participants (two Asian and three White participants) were further excluded for being multivariate outliers. The final analysis was performed on a sample of 384 participants, including 243 Asian participants and 141 White participants. The demographic characteristics of the two subsamples are detailed in Table 17.

**Table 17***Demographic Characteristics of Asian and White Subsamples*

	Asian ( <i>n</i> = 243)	White ( <i>n</i> = 141)
Age		
Range	18 – 30	18 – 52
Mean (SD)	19.33 (1.56)	19.64 (3.94)
Gender		
Men	63 (26.3%)	24 (17.0%)
Women	175 (72.0%)	115 (81.6%)
Other	1 (0.4%)	1 (0.7%)
Prefer not to say	3 (1.2%)	1 (0.7%)
Years living in Australia		
Mean (SD)	7.11 (7.21)	17.28 (6.19)

**Materials**

In addition to the scales measuring CB-V, CB-H, continuum beliefs, somatosensory amplification, and mental health experiences, two additional measures were included in Study 7. These included measures assessing dangerousness and distress tolerance, as detailed below.

**Dangerousness.** The 8-item scale measures how dangerous one perceives people with mental illness. It was adapted from Perceived Dangerousness of Mental Patients (Link et al., 1987) where the word “mental patient” was replaced by “patients with mental illness”. Participants rate their agreement on a 6-point Likert scale (0 = *Strongly disagree* to 5 = *Strongly agree*) to statements like “If I know a person has been a patient with mental illness, I will be less likely to trust him.” A higher score indicates a higher perceived dangerousness of patients with mental illness.

**Distress Tolerance (Simons & Gaher, 2005).** This 15-item scale measures an individual’s tolerance of psychological distress. Participants rated their extent of agreement

on a 5-point Likert scale (1 = *Strongly agree* to 5 = *Strongly disagree*) to statements such as “Feeling distressed or upset is unbearable to me”. Item 6 was reverse-scored. A higher score indicates a higher tolerance for emotional distress.

### ***Procedure***

This study was approved by the Human Research Ethics Committee of the University of Melbourne. The study listing was created and listed on the Research Participant Experience platform, which is the platform for recruiting undergraduate psychology students at the University of Melbourne. Interested students were redirected to the Qualtrics survey platform where they were shown a Plain Language Statement and gave their consent to participate. Participants then filled in a battery of measures including CB-V, CB-H, continuum beliefs, dangerousness, distress tolerance, and SSAS in randomised order. Participants then responded to mental health experiences and demographic questions (age, gender, race, political orientation, years living in Australia, and English as their first language). Finally, they were debriefed and credited for participation.

### ***Statistical Analysis***

All statistical analyses were conducted using the SPSS software version 29 and PROCESS macro (Hayes, 2013). Hypotheses were tested using bias-corrected bootstrapping mediation analyses, which is considered a powerful analysis to detect the mediation effect (Memon et al., 2018).

## **Results**

### ***Descriptive Statistics***

The reliability estimates, means, and standard deviations for each measure of the total sample, as well as by racial group, are presented in Table 18. All measures except the continuum belief measure achieved acceptable internal consistency with Cronbach’s alpha

values  $> .60$  in the total sample, as well as across racial groups. As explained in Study 6, the continuum beliefs scales had low internal consistency ( $\alpha = .23-.67$ ).

**Table 18**

*Reliability Estimates and Descriptive Statistics of All Measures*

Measures	Total (N = 384)		Asian (n = 141)		White (n = 243)	
	$\alpha$	Mean (SD)	$\alpha$	Mean (SD)	$\alpha$	Mean (SD)
Vertical breadth	.79	20.22 (5.60)	.78	19.15 (5.64)	.77	22.07 (5.03)
Horizontal breadth	.78	53.70 (9.25)	.77	52.91 (9.03)	.79	55.07 (9.50)
Continuum beliefs						
Continuity beliefs	.33	11.74 (1.90)	.23	11.89 (1.87)	.48	11.49 (1.94)
Fundamental difference	.61	5.52 (1.79)	.57	5.63 (1.75)	.67	5.33 (1.86)
Dangerousness	.85	1.74 (0.89)	.83	2.03 (0.89)	.77	1.23 (0.64)
Distress tolerance	.88	3.03 (0.70)	.88	2.98 (0.69)	.88	3.13 (0.71)
Somatosensory amplification	.68	3.29 (0.54)	.66	3.34 (0.52)	.70	3.20 (0.55)

***Demographic Differences Between Asian and White Participants***

There were significant differences between Asian and White participants in terms of years living in Australia and political orientation. White participants lived longer in Australia,  $t(329.04) = 14.58, p < .001$ , 95% CI [8.79, 11.54],  $d = 1.48$ , and were more politically liberal,  $t(382) = -4.99, p < .001$ , 95% CI [-0.87, -0.38],  $d = -0.53$ , than the Asian participants. No racial differences were found in gender,  $t(334.63) = 1.75, p = .08$ , 95% CI [-0.01, 0.18], and age,  $t(165.73) = 0.91, p = .37$ , 95% CI [-0.37, 1.00].

***Interrelationships Between Variables***

Correlations among variables within the total sample and within the two racial groups are presented in Tables 19 and 20 respectively. In the total sample, vertical breadth only correlated with dangerousness and all four mental health experience variables ( $r = .11-.17$ ). On the contrary, horizontal breadth significantly correlated with continuum



beliefs, distress tolerance, somatosensory amplification, and three out of the four mental health experience variables ( $r = .11-.22$ ). However, in the separate subsamples, vertical breadth did not correlate with any variable in the White subsample and similarly in the Asian subsample except family's experience of psychological problems ( $r = .20, p = .002$ ). The patterns of correlations with horizontal breadth were quite distinct in the two subsamples. In the Asian subsample, it correlated with both continuum beliefs variables, somatosensory amplification, and family's experience of psychological problems ( $r = .14-.27$ ). In the White subsample, it correlated with distress tolerance, somatosensory amplification, and personal experience of psychological problems ( $r = .18-.27$ ). The relationships reported above had effects of small to medium sizes.

**Table 19***Correlations Between All Variables*

	2	3	4	5	6	7	8	9	10	11
1. Vertical breadth	.42**	-.10	.04	-.17**	.001	-.01	.11*	.11*	.17**	.12*
2. Horizontal breadth		-.15**	.22**	-.05	-.11*	.16**	.13*	.14**	.17**	.05
3. Continuity beliefs			-.23**	.01	-.09	.06	-.04	-.05	-.02	-.007
4. Fundamental difference				.23**	-.19**	.09	.02	-.04	.01	-.08
5. Dangerousness					-.12*	.13*	-.18**	-.25**	-.29**	-.31**
6. Distress tolerance						-.35**	-.20**	-.18**	-.01	-.04
7. Somatosensory amplification							.13**	.11*	.01	.01
8. Personal experience of psychological problems								.63**	.33**	.26**
9. Personal help-seeking experience									.33**	.25**
10. Family's experience of psychological problems										.31**
11. Friends' experience of psychological problems										

*Note.* Pearson correlations were computed for correlations between variables 1-7; Point-Biserial correlations were computed for correlations

involving variables 8-11.

\* $p < .05$  \*\* $p < .01$

**Table 20***Correlations Between All Variables by Racial Groups*

	1	2	3	4	5	6	7	8	9	10	11
1. Vertical breadth		.43**	-.12	.15	.07	-.06	-.04	-.03	-.07	-.07	-.16
2. Horizontal breadth	.41**		-.14	.16	-.05	-.27**	.18*	.19*	.10	.11	.08
3. Continuity beliefs	-.05	-.14*		-.44**	-.08	.10	-.03	-.06	-.08	-.09	.004
4. Fundamental difference	.02	.27**	-.11		.29**	-.20*	-.01	-.02	.04	-.04	-.05
5. Dangerousness	-.12	.02	-.02	.20**		-.08	.06	-.17*	-.09	-.13	-.25**
6. Distress tolerance	-.01	-.03	-.20**	-.18**	-.08		-.36**	-.16	-.24**	.01	-.15
7. Somatosensory amplification	.06	.18**	.09	.14*	.09	-.32**		.18*	.23**	.02	-.03
8. Personal experience of psychological problems	.13	.07	-.01	.07	-.11	-.24**	.15*		.73**	.41**	.30**
9. Personal help-seeking experience	.10	.12	.01	-.05	-.17**	-.20**	.11	.55**		.27**	.28**
10. Family's experience of psychological problems	.20**	.17**	.05	.07	-.24**	-.06	.05	.25**	.28**		.30**
11. Friends' experience of psychological problems	.15*	.01	.02	-.07	-.26**	-.03	.06	.23**	.18**	.28**	

*Note.* Correlations above and below the diagonal correspond to the White American ( $n = 141$ ) and Asian American ( $n = 243$ ) subsamples

respectively. Pearson correlations were computed for correlations between variables 1-7; Point-Biserial correlations were computed for correlations involving variables 8-11.

\* $p < .05$  \*\* $p < .01$

### ***Relationships Between Race and Concept Breadth***

An independent sample  $t$ -test with equal variance ( $F = 0.94, p = .33$ ) comparing the groups on horizontal breadth was significant,  $t(382) = 2.22, p = .01, 95\% \text{ CI } [0.25, 4.08]$ .

White participants had broader concepts of mental disorder than Asian participants,  $d = .24, 95\% \text{ CI } [0.03, 0.44]$ . Similarly, the  $t$ -test with equal variance ( $F = 1.48, p = .22$ ) for vertical breadth was significant,  $t(384) = 5.09, p < .001, 95\% \text{ CI } [1.79, 4.05]$ . White participants again had broader concepts than their Asian counterparts,  $d = .54, 95\% \text{ CI } [0.33, 0.75]$ .

### ***Mediators of Racial Differences in Concept Breadth***

Similarly to Study 6, assumptions were checked and met for all relationships between variables in all mediation models. Mediation analyses were conducted with continuity belief, fundamental difference, perceived dangerousness, distress tolerance, and somatosensory amplification as separate mediators between race and vertical or horizontal breadth. Political orientation was included as a covariate since there were significant differences between the two races, as in Study 6. Age was not included as one since the Study 7 sample was an undergraduate student sample, so the age range was limited, and no significant difference was found between the two groups.

Regarding the racial differences in vertical breadth, none of the mediators were significant, and therefore,  $H_{3a-d}$  were not supported. For horizontal breadth, continuity beliefs, distress tolerance, and somatosensory amplification were significant mediators, and the separate models are presented in Figure 4-6. The total effect of race on horizontal breadth was significant,  $B = -1.99, p = .05, 95\% \text{ CI } [-3.97, -0.01]$ . In Figure 4, Asians had higher levels of continuity beliefs ( $B = 0.45, p = .03, 95\% \text{ CI } [0.04, 0.86]$ ) and that was associated with narrower horizontal concepts of mental disorder ( $B = -0.68, p = .006, 95\% \text{ CI } [-1.17, -0.20]$ ). The indirect effect was significant,  $B = -0.31, 95\% \text{ CI } [-0.80, -0.0003]$ , but the

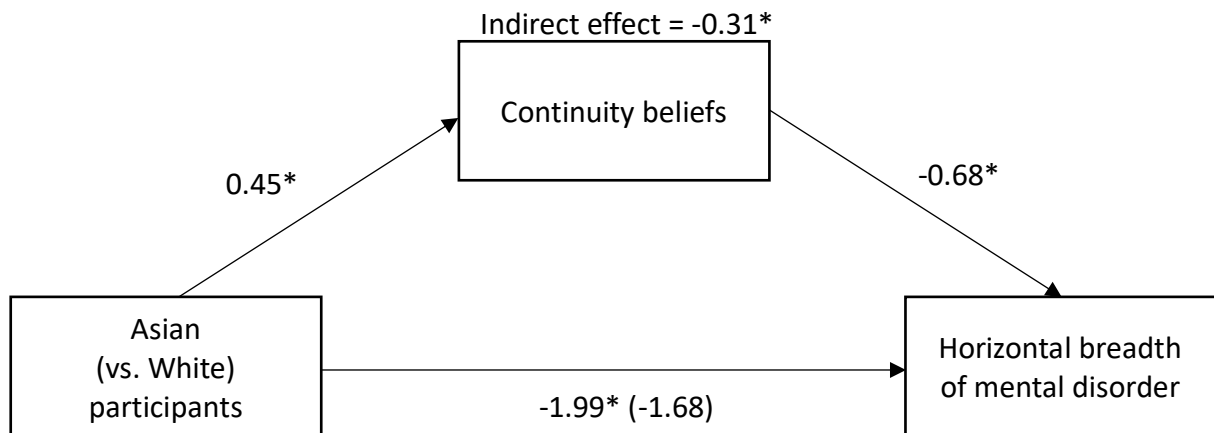
direct effect was not,  $B = -1.68$ ,  $p = .09$ , 95% CI [-3.66, 0.29]. Therefore, continuity beliefs completely mediated the race differences in horizontal breadth, supporting hypothesis H<sub>4a</sub>.

In Figure 5, Asians had a lower level of distress tolerance ( $B = -0.18$ ,  $p = .02$ , 95% CI [-0.33, -0.03]), and that was associated with broader concepts of mental disorder ( $B = -1.56$ ,  $p = .02$ , 95% CI [-2.88, -0.24]). Both the indirect ( $B = 0.28$ , 95% CI [0.01, 0.71]) and direct ( $B = -2.27$ ,  $p = .02$ , 95% CI [-0.29, -0.25]) effects were significant. Since the direct effect is larger than the total effect, distress tolerance had a suppression effect on the racial differences in horizontal breadth.

In Figure 6, Asians had a higher level of somatosensory amplification ( $B = 0.17$ ,  $p = .005$ , 95% CI [0.05, 0.28]), and that was related to broader concepts of mental disorder ( $B = 3.03$ ,  $p = .001$ , 95% CI [1.32, 4.75]). Both the indirect ( $B = 0.50$ , 95% CI [0.12, 1.01]) and direct ( $B = -2.49$ ,  $p = .01$ , 95% CI [-0.52, -0.27]) effects were significant. Similarly, somatosensory amplification also acted as a suppressor of the racial differences in horizontal breadth.

**Figure 4**

*Mediation Model for Horizontal Breadth With Continuity Beliefs as the Mediator*

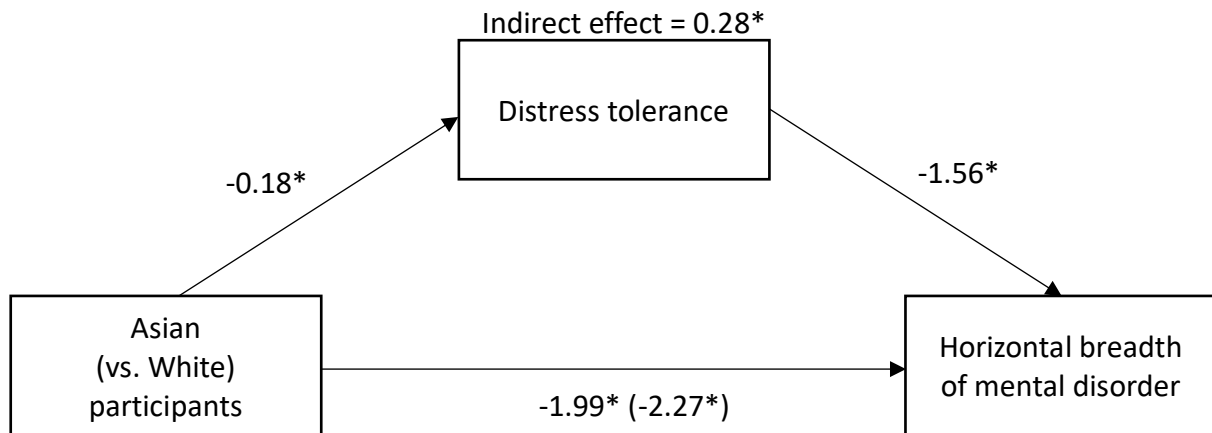


*Note.* Unstandardised regression coefficients for the relationship between race (Asian:  $n = 243$ ; White:  $n = 141$ ) and horizontal breadth of mental disorder as mediated by continuity beliefs. The unstandardised regression coefficient between race and horizontal breadth controlling for continuity beliefs is in parentheses. The indirect effect of continuity beliefs on the relationship was obtained from bootstrap analyses ( $n = 10000$ ).

\* $p < .05$

**Figure 5**

*Mediation Model for Horizontal Breadth With Distress Tolerance as the Mediator*

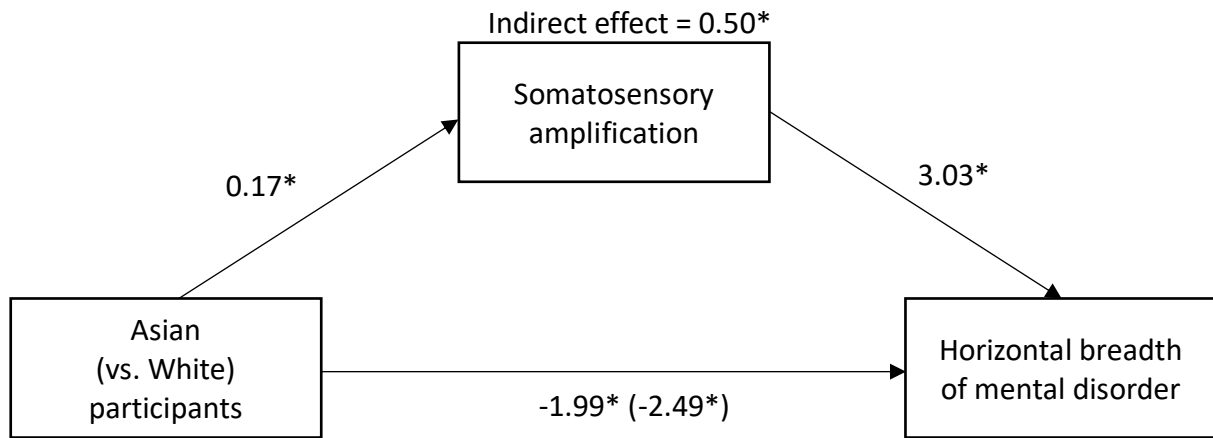


*Note.* Unstandardised regression coefficients for the relationship between race (Asian:  $n = 243$ ; White:  $n = 141$ ) and horizontal breadth of mental disorder as mediated by distress tolerance. The unstandardised regression coefficient between race and horizontal breadth controlling for distress tolerance is in parentheses. The indirect effect of distress tolerance on the relationship was obtained from bootstrap analyses ( $n = 10000$ ).

\* $p < .05$

**Figure 6**

*Mediation Model for Horizontal Breadth With Somatosensory Symptoms Amplification as the Mediator*



*Note.* Unstandardised regression coefficients for the relationship between race (Asian:  $n = 243$ ; White:  $n = 141$ ) and horizontal breadth of mental disorder as mediated by somatosensory amplification. The unstandardised regression coefficient between race and horizontal breadth controlling for somatosensory amplification is in parentheses. The indirect effect of somatosensory amplification on the relationship was obtained from bootstrap analyses ( $n = 10000$ ).

\* $p < .05$

All other variables were tested, and no significant mediating effect were found.

Indirect effect for each variable controlling for political orientation are presented in Table 21.



**Table 21**

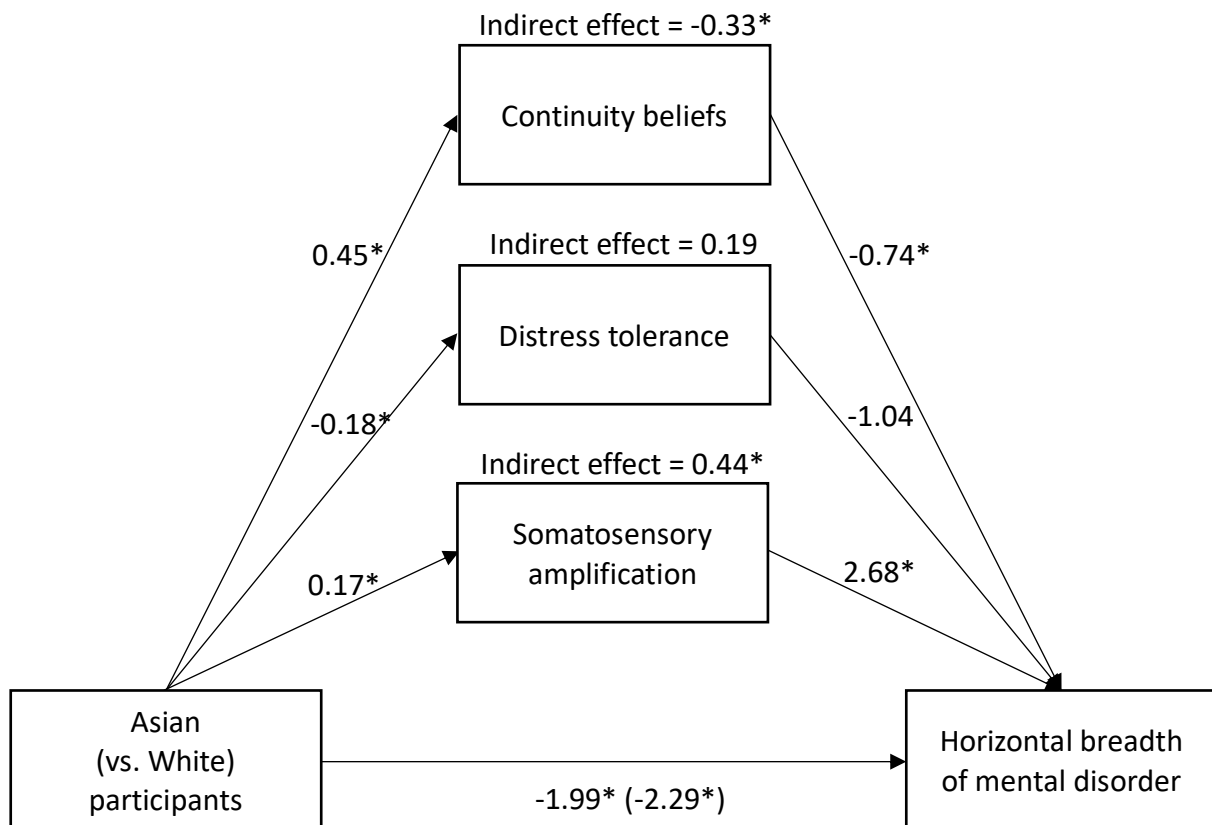
*Summary of Indirect Effect of Each Mediator for Concept Breadth Controlling for Political Orientation (N = 384)*

Mediator	Outcome: Vertical breadth			Outcome: Horizontal breadth		
	<i>B</i>	<i>SE</i>	95% CI	<i>B</i>	<i>SE</i>	95% CI
Continuity belief	-0.09	0.09	[-0.31, 0.04]	-0.31	0.21	[-0.80, -0.0003]
Fundamental difference	0.05	0.06	[-0.05, 0.19]	-0.09	0.39	[-0.87, 0.67]
Dangerousness	-0.42	0.26	[-0.95, 0.07]	0.11	0.41	[-0.69, 0.91]
Distress Tolerance	0.04	0.08	[-0.09, 0.24]	0.28	0.18	[0.01, 0.71]
Somatosensory amplification	0.05	0.09	[-0.12, 0.24]	0.50	0.23	[0.12, 1.01]

Since there were three significant mediators for the relationship between Asian and White participants on horizontal breadth, a parallel mediation including all three significant factors—continuity beliefs, distress tolerance, and somatosensory amplification—was conducted, as illustrated in Figure 7. Asians had significantly higher levels of continuity beliefs ( $B = 0.44$ ,  $p = .03$ , 95% CI [0.04, 0.86]) and somatosensory amplification ( $B = 0.17$ ,  $p = .005$ , 95% CI [0.05, 0.28]), but a lower level of distress tolerance ( $B = -0.18$ ,  $p = .02$ , 95% CI [-0.33, -0.03]). Higher continuity beliefs ( $B = -0.74$ ,  $p = .002$ , 95% CI [-1.22, -0.27]) and lower somatosensory amplification ( $B = 2.68$ ,  $p = .004$ , 95% CI [0.88, 4.48]), but not distress tolerance ( $B = -1.04$ ,  $p = .14$ , 95% CI [-2.41, 0.34]), were related to narrower vertical concepts of mental disorder. The total ( $B = -1.19$ ,  $p = .48$ , 95% CI [-1.06, 0.50]) and direct effect ( $B = -2.29$ ,  $p = .02$ , 95% CI [-4.25, -0.32]) of this parallel mediation model were significant. The indirect effects were significant for continuity beliefs ( $B = -0.33$ , 95% CI [-0.87, -0.02]) and somatosensory amplification ( $B = 0.44$ , 95% CI [0.09, 0.94]), but not distress tolerance ( $B = 0.19$ , 95% CI [-0.04, 0.57]). Therefore, continuity beliefs and somatosensory amplification had a partially mediating and suppressing effect on the relationship between race and horizontal breadth of mental disorder, respectively.

**Figure 7**

*Parallel Mediation Model for the Racial Differences on Horizontal Breadth Controlling for Political Orientation*



*Note.* Unstandardised regression coefficients for the relationship between race (Asian:  $n = 243$ ; White:  $n = 141$ ) and horizontal breadth of mental disorder as mediated by continuity beliefs, distress tolerance, and somatosensory amplification. The unstandardised regression coefficient between race and horizontal breadth controlling for continuity beliefs, distress tolerance, and somatosensory amplification is in parentheses. The indirect effect of continuity beliefs, distress tolerance, and somatosensory amplification on the relationship was obtained from bootstrap analyses ( $n = 10000$ ).

\* $p < .05$

## Discussion

Racial and cultural differences in mental health are crucial factors that impede ethnic minorities around the world from seeking and receiving appropriate mental health diagnoses and treatment. Utilising the newly validated concept breadth scales developed in the previous chapter, the two studies in this chapter aimed to uncover factors accounting for differences between Asian and White participants in the concepts of mental disorder. No such differences were found in Study 6, but White participants had broader (vertical and horizontal) concepts of mental disorder than Asian participants in Study 7. Some factors were found to partially account for differences in concept breadth in both studies.

In Study 6, although there was no racial difference in concept breadth, social distance partially mediated the relationship, supporting  $H_{2c}$ . In Study 7, no significant mediators were found for differences in vertical breadth, and therefore,  $H_{3a-d}$  were not supported. For horizontal breadth, continuity beliefs, distress tolerance, and somatosensory amplification were significant mediators, supporting  $H_{4a}$ ,  $H_{4c}$ , and  $H_{4d}$ . These relationships were further tested in a parallel mediation model, where the racial differences in horizontal breadth were found to be partially mediated by continuity beliefs and suppressed by somatosensory amplification.

The major difference between the two studies was the presence of racial differences in the breadth of the concepts of mental disorder. While Study 6 found no such differences, Study 7 found significant differences in both vertical and horizontal breadth. Study 7's findings aligned with previous studies by Giosan et al. (2001), Glovsky and Haslam (2003), and Tse and Haslam (2021), and is the first demonstration of racial differences in vertical breadth. The difference between the two studies could likely be attributed to the differences in sample populations – the American Prolific sample in Study 6 and the Australian

undergraduate psychology student sample in Study 7. Study 7 had a university student sample where a proportion were international students, especially in the Asian subsample, who may be more strongly identified with Asian cultures relative to the Asian Americans from the general public sample in Study 6. This was also reflected in the substantial differences in the average number of years they have lived in the respective countries; Asian Americans in Study 6 had lived 24.16 years in the United States of America and Asians in Study 7 had lived 7.11 years in Australia. It is therefore also possible that Asian Americans could be more acculturated to American culture. The Asian Americans could be second or even third-generation immigrants such that they are fairly acculturated to the American culture, which was also reflected in their higher level of (vertical) individualism and lower levels of (horizontal and vertical) collectivism than their White counterparts.

This speculation is supported by a more recent meta-analysis on cultural orientations focused exclusively on Americans, where there were no racial differences in either vertical or horizontal individualism or collectivism between European Americans and Asian Americans (Vargas & Kemmelmeier, 2012). If Asian Americans were highly acculturated to the American culture, it is possible that their concepts of mental disorder had also assimilated to those of the White Americans, resulting in no significant differences in their concept breadth.

Regardless of the significance of the racial differences in concept breadth, the studies revealed several factors that may help to account for these differences. Across the two studies, four mediators had an impact on the relationship between race and concept breadth, namely social distance, continuity beliefs, distress tolerance, and somatosensory amplification. In Study 6, although there was no significant racial difference in vertical breadth, the mediating effect of social distance was significant. This effect may be of limited importance, given the absence of a significant difference to account for, or a false positive

effect, since dangerousness, another aspect of stigma, was not a significant mediator in Study 7. The absence of this effect was somewhat surprising. While stigma has often been discussed as the main explanation for the cultural differences in mental health attitudes and help-seeking behaviours, especially between Asian and White populations (e.g., Rao et al., 2007; Whaley, 1997), the current null findings particularly in Study 7 indicated that some aspects of stigma had little influence on individuals' concept breadth, meaning that there are other factors contributing to the differences between Asian and White participants.

Distress tolerance was found to mediate the racial difference in horizontal breadth. Contrary to speculation, Asian participants had a lower tolerance for distress than White participants. The lower level of distress tolerance was related to having broader horizontal concepts, hence diminishing the overall effect of race on horizontal breadth. However, the suppressing effect of distress tolerance became non-significant in the parallel mediation model. The effect of distress tolerance was likely to be overshadowed by the stronger effects of continuity beliefs and somatosensory amplification. This suggests that the other two mediators may better explain the racial differences in horizontal breadth.

The mediation effects of somatosensory amplification and continuity belief on the racial difference in horizontal breadth in the separate simple mediation models were further supported by their significance in the parallel mediation model. Similar to distress tolerance, Asians had higher levels of somatosensory amplification, which was related to having broader concepts of mental disorder. This indicates that somatosensory amplification suppressed the racial difference in concept breadth. One potential explanation of this finding is that Asians, compared to their White counterparts, held a more holistic view of the mind-body connection. With the holistic belief that the mind and body are interconnected, Asians are more likely to interpret these bodily sensations as connected to the mind as well.

These holistic beliefs emphasise that imbalances in one aspect of health, such that physical or somatic state, are connected to and can affect the emotional state. Hence, when somatic sensations are amplified, the associated mental stress is emphasised as well. The stronger sense of emotional distress from these physical symptoms might lead to a broader interpretation of mental disorder, which is the suppressing effect of somatosensory amplification found on the racial effect on horizontal breadth.

Continuity beliefs also mediated the racial difference in horizontal breadth. Asian participants held more continuity beliefs about the nature of mental disorder and holding more continuity beliefs was related to having narrower horizontal concepts of mental disorder. In other words, they are more likely to restrict the disorder label to the more extreme end of a perceived spectrum rather than applying it broadly, perhaps because the mental disorder label is heavily stigmatised.

The current findings contributed to the cross-cultural literature by shedding light on the process of how race has an impact on concept breadth. While previous research has discussed and studied the existence of racial differences in the conceptualisation of mental disorder (e.g., Chentsova-Dutton & Ryder, 2020; Giosan et al., 2001; Glovsky & Haslam, 2003; Tse & Haslam, 2021), none had investigated the question from the perspective of concept breadth. Therefore, the findings are novel in understanding the cultural variations and the factors that may contribute to them.

These current findings carry some implications for research. The cultural differences observed in both vertical and horizontal breadth highlight the importance of the emerging research on concept breadth and concept creep theory to account for cultural factors. The significant factors identified in this chapter—continuity beliefs, distress tolerance, somatosensory amplification—indicate that cultural differences in bodily awareness and

beliefs about the continuity between mental health and ill health contribute to how mental disorders are conceptualised, partially influencing the differences in concept breadth between Asian and White populations. This aligns with many Asian cultures' holistic view of mind and body, where mental health is interconnected with physical health. In contrast, White people might be more likely to differentiate between the mind and body (i.e., mental and physical health), having a more categorical mindset about mental disorder, leading to differences in concept breadth between the two populations. The findings of these two studies, while providing some indications of mechanisms underlying the differences in conceptualisations of mental disorder, remain challenging to interpret, however. Exploring further the determinants of cultural differences in conceptualisations of mental health is therefore essential.

There are a few limitations to note. Firstly, although mediation analyses were conducted, the current data remains cross-sectional, such that no causal inference could be made. Experimentally manipulating these variables could aid in clarifying the direction of the effect. Secondly, "Asian" as a group encompasses a diverse range of ethnicities and cultures. Although the present studies investigated Asians as a broad category, it is in no way claiming that all the Asian subgroups are the same. This research was only a first attempt to study, if any, broad patterns exist and what could explain these patterns between the two groups. Our relatively small sample size of the Asian group did not allow investigation into more fine categories. Future studies could obtain a larger sample to examine the variations between Asian subgroups. Thirdly, the inconsistent findings concerning racial differences in concept breadth between the two studies warrant further research to confirm whether the effect or the lack of is an artefact of the sample population differences. The present studies also did not control for participants' level of acculturation to the country, which could be a

potential explanation for the different findings in the two studies as discussed. Future studies could include measures of acculturation to settle the discrepancy between the findings of the two studies. Fourthly, the internal consistency of the continuum belief measure was low. While the inconsistency was understandable from using three diverse disorders, it may have been unreliable in measuring continuum belief of mental disorder in general. Future study could use a different continuum belief measure or a single vignette describing mental disorder in general to investigate its relationship with concept breadth.

While cultural differences in the specific mental disorders are well-documented in the literature, no studies have examined the overall concept of mental disorder, particularly with regard to both vertical and horizontal concept breadth. Recognising these differences between Asian and White populations and the factors influencing them, underscores the complexity of culture's role in mental health.



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## Chapter 5 (Study 8): Broad Concepts of Mental Disorder Predict Self-Diagnosis<sup>3</sup>

### Abstract

Understanding why people identify themselves as having a mental disorder is crucial for making sense of recent rises in self-diagnosis and help-seeking. Previous studies have implicated factors such as levels of distress, mental health literacy, and stigma. Motivated by concept creep research, we tested whether self-diagnosis is also associated with the expansiveness of people's concepts of mental disorder. A nationally representative sample of 474 Americans completed measures of distress, impairment, mental health literacy, stigma, and newly validated concept breadth scales, in addition to current and lifetime mental disorder (both self- and professionally-diagnosed) and help-seeking. Structural equation modeling demonstrated that participants with broader concepts of disorder were more likely to self-diagnose and seek help, independent of distress and impairment, mental health literacy, and low stigma. Holding broader concepts also partially accounted for higher levels of self-diagnosis among younger and more liberal participants and predicted self-diagnosis independently of formal diagnosis. Implications for the surge in self-diagnosis and concerns about pathologization of everyday life are discussed.

*Keywords:* mental disorder; lay concepts; concept breadth; self-diagnosis; mental health; help-seeking

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<sup>3</sup> This chapter is presented in the exact format of a peer-reviewed published article. For the sake of consistency, the original referencing format from the published version has been retained. However, the numbering of studies, tables, and figures has been adjusted to align with the chronological order of presentation in this thesis. Additional tables were presented in Appendix D to illustrate the amount of variance explained by each factor for the two SEM models.

## Introduction

Understanding the rising prevalence of mental health problems is an urgent research priority. Some writers point to a surge in self-diagnosis, partly enabled by algorithmic social media platforms (Haltigan et al., 2023; Kim et al., 2020). TikTok, for example, has been singled out as contributing to rising identification with particular disorders, especially among young people (Frey et al., 2022; Zea Vera et al., 2022). Self-diagnosis can be defined narrowly as the belief one has a mental disorder without a professionally assigned diagnosis (Fellowes, 2023; Moses, 2009; Thoits, 2016), or broadly as identification as having a disorder whether or not one has received a formal diagnosis. It is essentially synonymous with the concept of self-identification, which refers to the process of perceiving one's symptoms as evidence of a mental illness (e.g., Evans-Lacko et al., 2019; Narendorf et al., 2023), or of identifying oneself as a person with mental illness following a formal diagnosis (e.g., Huynh et al., 2020). Self-diagnosis in the narrow sense can foster help-seeking (McLaren et al., 2023; Rutter et al., 2023; Schomerus, Muehlan, et al., 2019) but can also promote overdiagnosis (Justman, 2015), over-utilization of services (Fellowes, 2023; Justman, 2015), and maladaptive coping and loss of perceived control over one's condition (Ahuvia et al., 2024).

The determinants of self-diagnosis remain unclear (e.g., Giles & Newbold, 2011; Lewis, 2016; Valente et al., 2020). Studies of "psychology student syndrome" (Deo & Lymburner, 2011) find that it reflects a combination of academic and non-academic exposure to mental illness and prior life experiences (Ahmed & Samuel, 2017). In the wider population, Schomerus, Stolzenburg, et al. (2019) surveyed German adults with untreated mental disorders and found that greater knowledge about depression and lower stigma predicted more self-diagnosis, and Bogdanova et al. (2022) showed that propensity to self-

diagnose was associated with gender, age, and ethnic minority status in an English community sample.

Concept creep (Haslam, 2016), the tendency for harm-related concepts to broaden their meanings over time, offers a new perspective on self-diagnosis and the rising prevalence of mental illness. In the context of *mental disorder*, it involves a wider variety of conditions (horizontal creep) and less severe problems (vertical creep) coming to be regarded as disorders. This semantic expansion has featured in critiques of diagnostic inflation (Frances, 2013b), medicalization (Conrad & Slodden, 2013), pathologization (Brinkmann, 2016), and psychiatrization (Beeker et al., 2021; Horwitz & Wakefield, 2007). Research examining large historical text corpora has found evidence that *anxiety*, *depression*, and *trauma* have undergone both forms of concept creep in recent decades (e.g., Haslam, Vylomova, et al., 2021; Xiao et al., 2023). Recent research has also demonstrated an experimental analogue of concept creep in judgments of mental illness (Speerforck et al., 2024).

Concept creep involves historical variability in the breadth of concepts. Individual differences in concept breadth also exist and can be measured validly and reliably (Tse & Haslam, 2023a [Thesis Studies 2-5]). Having broader concepts is associated with holding less stigmatizing views of people with mental disorders and more positive attitudes toward help-seeking, and it is only very weakly related to mental health literacy (Tse & Haslam, 2021; Tse & Haslam, 2023a [Thesis Studies 2-5]). People with more expansive concepts might also be more likely to self-diagnose because they judge a wider range of phenomena to be disorders or have a lower threshold for identifying disorders. The greater propensity to self-diagnose might foster help-seeking but also exacerbate and entrench mental health problems. In line with this concern, Foulkes and Andrews (2023) argued that efforts to boost mental health

awareness may inadvertently increase mental health problems by leading people to label milder forms of distress as disorders. ‘Prevalence inflation’ may occur when changes in their self-concepts have self-fulfilling effects.

There is currently no empirical evidence that individual differences in concept breadth are implicated in self-diagnosis. Other factors that may be implicated are distress, impairment, knowledge, and stigma. Subjective distress and functional impairment are central to formal definitions of mental disorder (e.g., the Diagnostic and Statistical Manual of Mental Disorders [5th ed., DSM-5; American Psychiatric Association [APA], 2013) and to laypeople’s disorder judgments (Tse & Haslam, 2023b [Thesis Study 1]). Having more symptoms of distress and impairment correlates with self-diagnosis among young people (Evans-Lacko et al., 2019). Mental health literacy, defined as accurate understanding and knowledge of mental disorders (Jorm et al., 1997), should also foster self-diagnosis, consistent with Schomerus, Stolzenburg et al.’s (2019) findings on knowledge of depression. Conversely, people holding stigmatizing attitudes towards mental disorder would be expected to be less likely to self-diagnose because they perceive mental disorder as unpleasant and shameful (Goffman, 2009; Link & Phelan, 2001), an expectation supported by several studies (Hasan et al., 2023; Schomerus et al., 2012; Stolzenburg et al., 2017). Since research finds that self-diagnosis tends to facilitate help-seeking (e.g., Kagstrom et al., 2019; Xu et al., 2016), these factors would be expected to predict it indirectly as well.

Given the scarcity of research on contributors to self-diagnosis, we examined whether distress, impairment, mental health literacy, stigma, and innovatively, concept breadth, predicted it and personal help-seeking. Structural equation modeling (SEM) was used to evaluate the relationships among the study variables. To complement our primary focus on self-diagnosis in the broad sense (i.e., self-identification with a diagnosis with or

without professional diagnosis), we also assessed the effect of the presence or absence of a formal diagnosis. Three hypotheses were tested:

H<sub>1</sub>: Formal diagnosis will be associated positively with concept breadth, distress, impairment, and mental health literacy and negatively with stigma.

H<sub>2</sub>: Self-diagnosis will be associated positively with concept breadth, distress, impairment, and mental health literacy and negatively with stigma.

H<sub>3</sub>: Self-diagnosis will be positively associated with help-seeking behavior.

In addition to testing these hypotheses, we evaluated whether the five factors were associated with self-diagnosis in the absence of a formal diagnosis. Previous research (Rutter et al., 2023) finds that sizeable proportions of people, typically with elevated symptoms, assert they warrant a diagnosis but have not received one. We expected that such people would have expansive concepts of disorder. We also examined whether concept breadth might account for demographic correlates of self-diagnosis. Younger and more politically liberal people are at elevated risk of psychiatric diagnoses (Gimbrone et al., 2022) and tend to hold broad concepts of disorder (Tse & Haslam, 2023a [Thesis Studies 2-5]).

## **Method**

### **Participants**

An a priori sample size calculator for SEM (Soper, 2024) estimated that the minimum sample needed to detect a small to medium effect size with a power of .80 at an alpha level of .05 is 444. A nationally representative sample of 508 United States residents was recruited on the Prolific platform. The platform stratified the sample to match U.S. Census proportions for participants' age, sex, and ethnicity. Four participants were excluded for failing two or more attention checks and a further 30 were excluded as multivariate outliers

while checking SEM assumptions (Mahalanobis distance > 106). Demographic characteristics of the final sample of 474 participants are presented in Table 22.

**Table 22**

*Demographic Composition of the Participants (N = 474)*

	Number
Age	
Range	18-84
Mean (SD)	45.00 (15.85)
Gender	
Men	241
Women	253
Other	8
Ethnicity	
White	357
Hispanic or Latino/a	30
Black or African American	69
Asian	37
Other	9
Education	
Some high school	6
High school graduate	61
Some college	114
Associate degree	55
Bachelor's degree	179
Master's degree	64
Doctoral degree	23
Annual income (USD)	
Less than \$50000	273
\$50000-99999	156
\$100000-149999	39
\$150000 or more	21
Prefer not to say	13

## Measures

### *Concept Breadth*

The expansiveness of participants' concepts of mental disorder was measured by recently validated scales assessing horizontal and vertical breadth.



**Horizontal Breadth of Mental Disorder (CBMD-H; Tse & Haslam, 2023a [Thesis Studies 2-5]).** This 15-item scale assesses the range of different kinds of phenomena that people judge to be mental disorders. After reading a description of a person's behavior participants rate their agreement to the statement "This person has a mental disorder" on a 6-point Likert scale (1 = *Strongly disagree* to 6 = *Strongly agree*). Fifteen diverse forms of behavior (7 corresponding to *DSM-5* disorders and 8 not), selected on the basis of extensive piloting, appear on the scale. The total score ranges from 15 to 90, with higher scores indicating a broader concept. An example item can be found in Appendix A.

**Vertical Breadth of Mental Disorder – Short Form (CBMD-V-SF; Tse & Haslam, 2023a [Thesis Studies 2-5]).** This 10-item scale assesses the severity threshold at which behavior is judged to be disordered. Each item describes a person's behavior that extensive piloting determined to be close to the threshold in American samples (i.e., roughly equal proportions of participants judged it to be disordered or not disordered). Participants responded to each description with a dichotomous "yes" (1) and "no" (0) to the statement "This person has a mental disorder". The total score ranges from 0 to 10, where a higher score indicates a broader concept. An example item can be found in Appendix B.

### ***Distress***

**Kessler Psychological Distress Scale (K10; Kessler et al., 2002).** The K10 is a widely used scale for assessing recent psychological distress. Participants respond to the prompt "In the past 30 days, about how often did you feel..." followed by 10 items, such as "nervous", on a 5-point Likert scale (1 = *None of the time* to 5 = *All of the time*). The total score ranges from 10 to 50, with higher scores indicating greater distress.

## ***Impairment***

**The World Health Organization Disability Assessment Schedule 2.0 (WHODAS 2.0; Ustun et al., 2010).** The WHODAS 2.0 assesses the impact of physical and mental health conditions on an individual's functioning and ability to participate in everyday life activities. The 12-item short form used in this study covers a range of activities from the same six domains as the full 36-item scale: understanding and communicating, getting around, self-care, getting along with others, life activities, and participation in society. Participants were asked “In the past 30 days, how much difficulty did you have in...” the 12 activities (e.g., “maintaining a friendship”) and responded on a 5-point Likert scale (1 = *None* to 5 = *Extreme or cannot do*). The total score ranges from 12 to 60, with higher scores on WHODAS 2.0 indicating greater impairment.

## ***Mental Health Literacy***

**Mental Health Literacy Assessment for College Students (MHLA-c; Rabin et al., 2021).** The MHLA-c (Form B) assesses people’s mental health literacy with 18 multiple-choice questions, each with one correct answer from five options. For example, “Which of the following is the most common long-term course of dementia?” with options: (a) improvement; (b) paralysis; (c) progression; (d) remission; and (e) stabilization. Total score ranges from 0 to 18, with higher scores indicating greater literacy.

Other commonly used mental health literacy scales (e.g., Compton et al., 2011; Evans-Lacko et al., 2010; O'Connor & Casey, 2015) are either vignette-based or overlap with stigma, which was assessed separately in this study. Although originally designed for college students, the MHLA-c scale covers mental health problems affecting people of all ages and yielded high reliability ( $\alpha = .87$ ) and mean literacy (69.40%) in the present sample, where the majority had some college education (85.86%).

## ***Stigma***

**Social Distance Scale (SDS; Link et al., 1987).** Stigmatizing attitudes towards people with mental disorders were assessed with the widely used 7-item SDS. A general public stigma measure of this kind was employed to assess these attitudes because measures of self-stigma would not be appropriate for participants who were not experiencing a mental disorder. Participants rated their willingness on a 4-point Likert scale (0 = *Definitely unwilling* to 3 = *Definitely willing*) to questions like “How would you feel having someone with a mental disorder as a neighbor?” The total score ranges from 0 to 21, where higher scores indicate greater stigma.

## ***Formal Diagnosis***

Current and lifetime formal diagnoses were captured by two binary questions: “Do you currently have any formal diagnosis of a mental illness or mental disorder from a mental health professional (e.g., psychologist or psychiatrist)?” and “In your lifetime, have you received any formal diagnosis of a mental illness or mental disorder from a mental health professional (e.g., psychologist or psychiatrist)?”, respectively. “Yes” and “no” responses were coded as 1 and 0.

## ***Self-Diagnosis***

As there is no consensus on how to measure self-diagnosis, we included two measures employed in research on the topic (e.g., Alex & Babu, 2023; Bogdanova et al., 2022).

**Current and Lifetime Self-Diagnosis.** Similar to formal diagnosis, current and lifetime self-diagnoses were measured by two binary questions (“Yes” [1] and “No” [0]): “In the past 30 days, did you think you have a mental illness or mental disorder at any point?” and “In

your lifetime, have you ever thought you have a mental illness or mental disorder at any point?”.

**Self-Identification of Having a Mental Illness (SELF-I; Schomerus, Muehlan, et al., 2019).** The SELF-I scale assesses the degree to which people attribute their current experiences to having a mental disorder. Participants rated their agreement with five statements such as “Current issues I am facing could be the first signs of a mental illness,” on a 5-point Likert scale (1 = *Don't agree at all* to 5 = *Agree completely*). The total score ranges from 5 to 25, with higher scores indicating greater self-diagnosis.

### ***Help-Seeking***

**Help-Seeking Attitudes.** Attitudes towards mental health help-seeking were assessed by the Inventory of Attitudes Toward Seeking Mental Health Services Scale (IASMHS; Mackenzie et al., 2004). IASMHS has three 8-item subscales: psychological openness (e.g., “It is probably best not to know everything about oneself”), help-seeking propensity (e.g., “I would want to get professional help if I were worried or upset for a long period of time”), and indifference to stigma. The last subscale was excluded due to overlap with the stigma measure (see Loya et al., 2010; Tse & Haslam, 2021). Participants rated their agreement with 16 statements on a 5-point Likert scale (0 = *Disagree* to 4 = *Agree*). The total score ranges from 0 to 64, where a higher score indicates more positive attitudes towards help-seeking.

**Help-Seeking Behaviors.** Current and lifetime help-seeking from formal and informal sources were assessed by four binary questions (“Yes” [1] and “No” [0]): “[In the past 30 days/In your life], have you sought and/or received help from [formal/informal] sources for any psychological or emotional problems?” The formal (GP/doctors, mental health professionals, psychologists, psychiatrists, or phone helplines) and informal (intimate

partner, parent, friend, family member, teacher, or religious leader) help-seeking sources were defined in the question prompt.

### **Procedure**

This study was approved by the Human Research Ethics Committee of the University of Melbourne (Project ID: 22972) and preregistered on the Open Science Framework (<https://osf.io/dytc6>). A study description was advertised on the Prolific platform and interested Prolific users were redirected to Qualtrics, where they provided informed consent and completed all measures in a randomized order, followed by a set of demographic questions including age, gender, ethnicity, education level, annual income, years living in the US, English as a first language, English proficiency, and political orientation. The last variable was measured using a single question “Here is a scale on which the political views that people might hold are arranged from extremely liberal (left) to extremely conservative (right). Where would you place yourself on this scale in general?” with a 7-point scale (-3 = *Extremely liberal* to 3 = *Extremely conservative*).

### **Statistical Analysis**

Descriptive, regressions, and mediation analyses were conducted using IBM SPSS Statistics Version 29.0 and PROCESS macro. Analyses with SEM were conducted using R Studio (version 2023.6.1.524; Posit team, 2023) and the lavaan package (version 0.6-16; Rosseel, 2012).

## **Results**

### **Descriptive Statistics**

The reliability, means, and standard deviations for all continuous variables and frequency count and percentages for binary variables are presented in Table 23 and 24.

Reliabilities for all measures were strong. Rates of self-diagnosis substantially exceeded rates of formal diagnosis.

**Table 23**

*Reliability and Descriptive Statistics for All Measures (N = 474)*

	Reliability ( $\alpha$ )	Mean	SD
Horizontal breadth	.83	55.31	10.83
Vertical breadth	.77	6.81	2.15
Distress	.94	19.55	9.14
Impairment	.92	21.01	8.92
Mental health literacy	.87	12.49	3.17
Stigma	.90	1.45	0.70
Self-diagnosis (SELF-I)	.90	14.48	6.14
Help-seeking attitudes	.85	43.40	10.68

**Table 24**

*Frequency Counts and Percentages for Binary Variables (N = 474)*

	Yes (%)	No (%)
Current formal diagnosis	150 (31.65)	324 (68.35)
Lifetime formal diagnosis	206 (43.46)	268 (56.54)
Current self-diagnosis (binary)	197 (41.56)	277 (58.44)
Lifetime self-diagnosis (binary)	288 (60.76)	186 (39.24)
Recent formal help-seeking behaviors	85 (17.93)	389 (82.07)
Recent informal help-seeking behaviors	261 (55.06)	213 (44.94)
Lifetime formal help-seeking behaviors	101 (21.31)	373 (78.69)
Lifetime informal help-seeking behaviors	238 (50.21)	236 (49.79)

Table 25 presents correlations among the variables. The concept breadth scales were substantially independent of distress, impairment, mental health literacy, and stigma (all  $r < \pm .27$ ). All proposed predictors were significantly associated in the predicted direction with all diagnosis-related variables. The two (current) self-diagnosis measures were highly

convergent ( $r = .78$ ), and self-diagnosis and formal diagnosis were strongly associated for both current and lifetime diagnosis ( $r_s = .65, .67$ ).

Table 25

### Correlations Amongst All Variables

[illegible]



16. Lifetime informal  
help-seeking

---

*Note.* Pearson correlations were computed for correlations between variables 1-6, 11-12 only; Point-Biserial correlations were computed for correlations involving variables 7-10, 13-16.

\* $p < .05$ ; \*\* $p < .01$

### Concept Breadth and Demographic Variables

Consistent with previous research (Tse & Haslam, 2023a [Thesis Studies 2-5]), younger participants had more expansive concepts of mental disorder (horizontal breadth,  $r = -.27, p < .001$ ; vertical breadth,  $r = -.11, p = .02$ ) as did more politically liberal participants (horizontal breadth,  $r = -.25, p < .001$ ; vertical breadth,  $r = -.12, p = .01$ ). Concept breadth was unrelated to gender, race, education, and income.

Age ( $r = -.40, p = .01$ ) and political orientation ( $r = -.27, p = .01$ ) were associated with self-diagnosis (SELF-I). Mediation analyses tested whether concept breadth could partially account for these associations. In the first pair of analyses, there was a significant indirect association between age and self-diagnosis via concept breadth (horizontal breadth,  $B = -0.02$ , 95% CI [-0.03, -0.01]; vertical breadth,  $B = -0.01$ , 95% CI [-0.01, -0.001]). In the second pair, there was a significant indirect association between political orientation and self-diagnosis via concept breadth (horizontal breadth,  $B = -0.18$ , 95% CI [-0.29, -0.09]; vertical breadth,  $B = -0.06$ , 95% CI [-0.13, -0.01]). Concept breadth therefore partially mediated both associations.

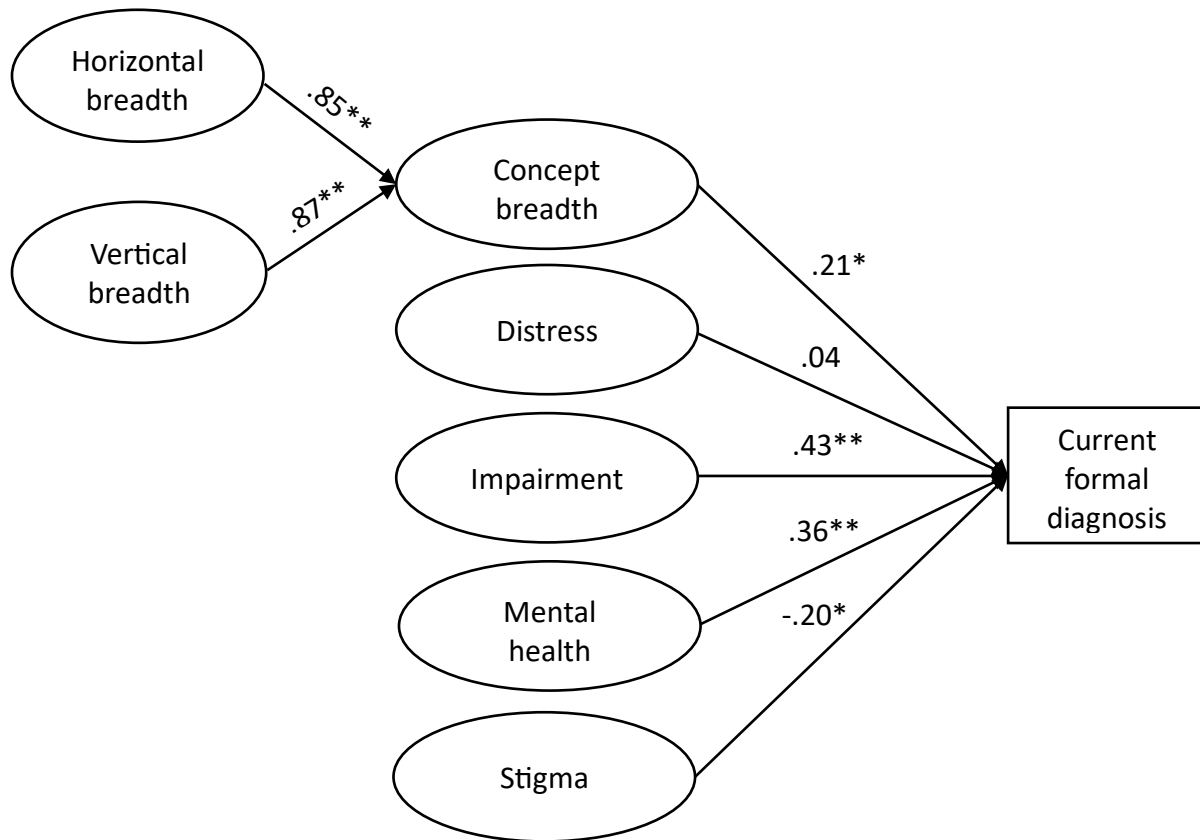
### Predictors of Current Formal Diagnosis

SEM tested the hypothesized relationships between the predictors and formal diagnosis or self-diagnosis. The two concept breadth measures were treated as components of a latent concept breadth factor. Separate analyses were conducted with formal diagnosis and self-diagnosis as outcome variables. Given the multiple measures of diagnosis and help-seeking, we restricted the primary analyses to one each for formal diagnosis and self-diagnosis, reported analyses for current rather than lifetime diagnosis, and included help-seeking behavior as an outcome measure only in the self-diagnosis analysis. However, all SEMs were run (results available on request), and findings were consistently replicated.

Figure 8 shows the SEM predicting current formal diagnosis. The vertical breadth and mental health literacy scales contained binary observed variables so diagonally weighted least squares (DWLS) estimation was employed (Forero et al., 2009; Li, 2016). As cut-off values of model fit indices based on DWLS estimation are lacking (Yang & Xia, 2015), our models were compared against widely used values based on maximum likelihood estimation (Marsh et al., 2004). A close fit model is therefore indicated by a Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI)  $\geq .95$ , Root Mean Square Error of Approximation (RMSEA)  $\leq .06$  with a 90% CI between 0 and 0.10, and Standardized Root Mean Square Residual (SRMR)  $\leq .08$  (Gana & Broc, 2019; Hu & Bentler, 1999). The fit indices for the formal diagnosis model were  $\chi^2(2526) = 3333.70$ ,  $p < .001$ ; CFI = 0.87; TLI = 0.87; RMSEA = 0.03, 90% CI [0.02, 0.03]; and SRMR = .08. Since chi-square is sensitive to sample size (Gerbing & Anderson, 1985), the literature suggests that  $\chi^2/df \leq 3$  represents a reasonable fit (Kline, 2023). For this model, the value was 1.32. The model's CFI and TLI were below the recommended thresholds, but RMSEA, RMSEA 90% CI, and SRMR all indicated an acceptable fit. In the model, concept breadth, impairment, and mental health literacy were positively associated with formal diagnosis and stigma was negatively associated, supporting Hypothesis 1 except for the null effect of distress. Collectively the predictors explained 55.40% of the variance in formal diagnosis.

**Figure 8**

*Model With Five Factors Predicting Current Formal Diagnosis*



*Note.* The observed variables and error variances were not presented for simplification of the figure. All loading coefficients of observed variables to their respective construct were significant.

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\*  $p < 0.001$ .

### Predictors of Self-Diagnosis and Help-Seeking Behaviors

Figure 9 displays the SEM (again using DWLS estimation) predicting self-diagnosis and recent formal help-seeking. Model fit indices were:  $\chi^2(2888) = 3739.05$ ,  $p < .001$ ; CFI = 0.87; TLI = 0.87; RMSEA = 0.03, 90% CI [0.02, 0.03]; SRMR = 0.08; and  $\chi^2/df = 1.29$ . These indices

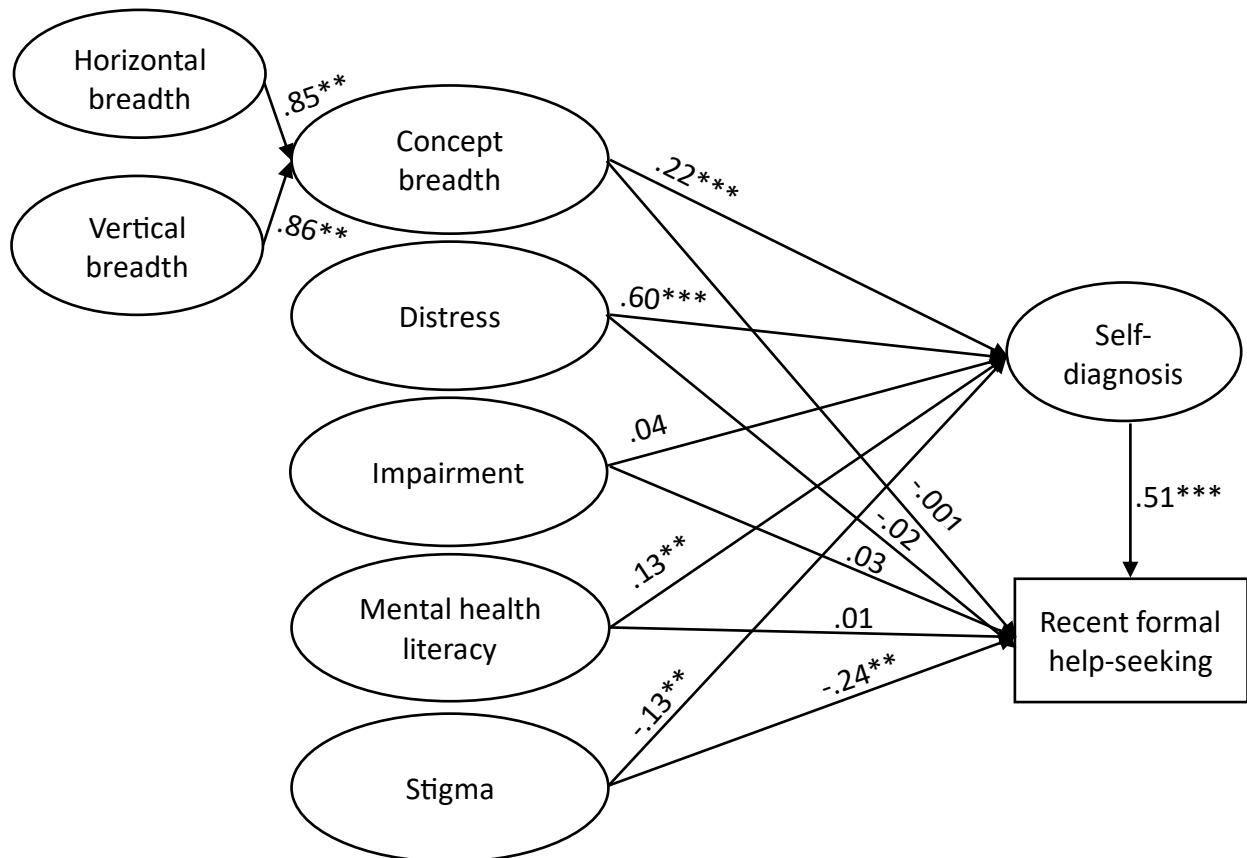
again demonstrate an acceptable fit. Concept breadth, distress, and mental health literacy were positively associated with self-diagnosis and stigma was negatively associated. Apart from the null effect for impairment, these findings support Hypothesis 2. Among the predictor variables, only stigma was directly (negatively) associated with help-seeking. By implication, the bivariate correlations of concept breadth, distress, and mental health literacy with help-seeking are mostly explained by their mutual associations with self-diagnosis, which was strongly associated with help-seeking in the SEM, supporting Hypothesis 3. Collectively the model explained 65.00% of the variance in self-diagnosis and 42.90% of the variance in help-seeking. When the same model was run using the binary current self-diagnosis item in place of the SELF-I scale, the model fit indices and results were similar, but with distress rather than stigma directly predicting help-seeking.

Finally, we tested whether the predictors were associated with self-diagnosis after statistically controlling for formal diagnosis. Among the 197 participants who had a current self-diagnosis, 133 (67.51%) also had a current formal diagnosis, indicating that a significant proportion of their diagnoses had not been professionally supported (i.e., self-diagnosis in the narrow sense). We examined whether concept breadth would predict this outcome, conducting two multiple regression analyses with SELF-I as the outcome variable, and current formal diagnosis, distress, impairment, mental health literacy, stigma, and horizontal or vertical concept breadth as predictors. In the horizontal breadth analysis,  $F(6,467) = 128.88, p < .001, R^2 = .62$ , the significant predictors were presence of a formal diagnosis ( $\beta = .36, p < .001$ ), greater distress ( $\beta = .45, p < .001$ ), lower stigma ( $\beta = -.09, p = .004$ ), and greater horizontal breadth ( $\beta = .12, p < .001$ ). The vertical breadth scale analysis,  $F(6,467) = 127.21, p < .001, R^2 = .62$ , yielded very similar findings, the significant predictors again being

formal diagnosis ( $\beta = .36, p < .001$ ), greater distress ( $\beta = .46, p < .001$ ), lower stigma ( $\beta = -.10, p = .002$ ), and greater vertical breadth ( $\beta = .10, p < .001$ ).

**Figure 9**

*Model With Five Factors Predicting Self-Diagnosis and Recent Formal Help-Seeking Behaviors*



*Note.* The measure items and error variances were not presented for simplification of the figure. All loading coefficients of observed variables to their respective constructs were significant.

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$ .

## Discussion

Our findings clarify the factors associated with self-diagnosis of mental disorders in the community. The two SEMs provide substantial support for the three hypotheses, as well as demonstrating good model fits and powerful overall prediction of self-diagnosis and help-seeking. Supporting Hypothesis 1, broader concepts of mental disorder, greater impairment, higher mental health literacy, and lower stigma predicted formal diagnosis. Supporting Hypothesis 2, broader concepts, greater distress, higher mental health literacy, and lower stigma predicted self-diagnosis. Finally, supporting Hypothesis 3, self-diagnosis was strongly associated with recent formal help-seeking behaviors.

Impairment or distress had the strongest associations with diagnosis in the SEM analyses, but each became nonsignificant in the presence of the other. This pattern of findings probably reflects their strong correlation ( $r = .72$ ), although this did not exceed standard thresholds for multicollinearity ( $VIF > 5$ ; Chatterjee & Hadi, 2013; Gregorich et al., 2021). Distress may itself be impairing and some WHODAS2.0 items (e.g., “How much have you been emotionally affected by your health problems?”) overlap with the K10, posing challenges in differentiating the two constructs (Phillips, 2009). Nevertheless, the centrality of distress and impairment in diagnosis aligns with the *DSM-5* definition of mental disorder (APA, 2013) and laypeople’s disorder judgments (Tse & Haslam, 2023b [Thesis Study 1]). Our results extend Evans-Lacko et al.’s (2019) findings about the importance of distress in self-diagnosis among young people to the importance of impairment over the full adult age range.

Mental health literacy and stigma were significant predictors of the diagnosis variables, with somewhat stronger associations with formal diagnosis than self-diagnosis. These findings support the view that greater knowledge and acceptance of mental ill health

promote recognition of one's own mental health problems. They broadly align with most existing literature (Biddle et al., 2007; Hasan et al., 2023; Schomerus et al., 2012; Schomerus, Stolzenburg, et al., 2019; Stolzenburg et al., 2017). In addition, we extended previously obtained associations between stigma and self-diagnosis to a community sample and a new aspect of stigma (social distance). Social distance was the only predictor variable directly associated with help-seeking, suggesting that stigma is a barrier to recognizing and seeking help for mental health problems. The absence of direct paths from the other four factors to help-seeking highlights the importance of self-diagnosis (acknowledgment of problems) to the help-seeking process (Biddle et al., 2007; Kagstrom et al., 2019; Xu et al., 2016).

The findings related to concept breadth were the main focus of the study and are the most novel and important. Concept breadth emerged as the second most influential predictor of self-diagnosis in the self-diagnosis SEM and the third most influential in the formal diagnosis SEM. These findings extend earlier research showing that broad concepts were associated with lower stigma and more positive help-seeking attitudes and behaviors (Tse & Haslam, 2021; Tse & Haslam, 2023a [Thesis Studies 2-5]), demonstrating that concept breadth is also associated with self-related judgments and help-seeking behaviors. Holding constant levels of distress, mental health literacy, impairment, and stigma, people with broader concepts of mental disorder were more likely to interpret their experiences as evidence of mental disorder. In addition, concept breadth mediated tendencies for more self-diagnosis among younger and more politically liberal participants, and it predicted self-diagnosis over and above formal diagnosis, suggesting that it is a factor in people's tendency to self-diagnose in the absence of diagnosis by a professional. Concept breadth is therefore a promising new factor in understanding multiple aspects of mental health.



The current findings carry implications for research and practice. Since concept breadth is negatively associated with stigma and predicts self-diagnosis and thereby greater help-seeking, campaigns to reduce stigma and promote help-seeking might aim to foster broader concepts instead of focusing exclusively on increasing mental health literacy. However, concerns that efforts to raise mental health awareness may inadvertently increase rates of self-diagnosed disorder and exacerbate mental health problems (the “prevalence inflation hypothesis”; Foulkes & Andrews, 2023) suggest that boosting expansive concepts of mental disorder has significant risks. Although it may lead people to correctly identify their problems as disorders, it might also lead them to mistakenly identify subclinical or transient problems as mental disorders, with possible flow-on effects such as loss of perceived control, ineffective coping (Ahuvia et al., 2024), iatrogenic illness, and unnecessary treatment.

The specter of these effects has been raised by critics of what has been variously dubbed diagnostic inflation, medicalization, pathologization, and psychiatrization (e.g., Beeker et al., 2021; Brinkmann, 2016; Conrad & Slodden, 2013; Frances, 2013b; Horwitz & Wakefield, 2007). The common thread of these criticisms is that concepts of mental disorder have swelled and spread over time, with the result that behaviors and experiences previously considered “normal” have come to be defined as pathological or disordered. In the context of this research and concerns about over-pathologization, and empirical evidence that mental illness-related concepts have undergone semantic inflation in recent years (Haslam, Vylomova, et al., 2021; Xiao et al., 2023), our finding that broader concepts of mental disorder are associated with self-diagnosis is societally significant. Similarly, the apparent relevance of broad concepts of mental disorder to the relatively high rates of self-

diagnosis among young people raises important questions about the youth mental health crisis.

Our research has several limitations. First, our cross-sectional data do not allow causal inferences about the determinants of self-diagnosis. Participants who self-diagnose might experience higher distress as a consequence rather than a cause of their self-diagnosis, and people may come to hold broader concepts of disorder due to personal exposure to mental disorder. Similarly, our mediation analyses cannot be interpreted causally. Longitudinal research could help to clarify these matters. Second, the study's measures of help-seeking do not evaluate whether the help sought was appropriate or effective. Although help-seeking is usually presumed to be desirable, it can be unwarranted and ineffective. Third, our measures of formal diagnosis relied on participants' self-reports, and therefore may be imperfect indices of their actual diagnostic history. Fourth, the study only investigated the breadth of the generic concept of mental illness. Further research could examine the implications of holding broad or narrow concepts of specific disorders for self-diagnosis, help-seeking, and other outcomes.

Regardless of the potential benefits and costs associated with self-diagnosis and help-seeking, understanding what contributes to them is an important goal for researchers, particularly at a historical moment when rates of diagnosis are rising. As public interest in mental health rises and information about it proliferates, this understanding is increasingly urgent.

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## Chapter 6: General Discussion

Research from the 1950s to the 2000s has suggested that concepts of mental disorder are changing, especially in terms of people's attitudes and their beliefs about what "mental disorder" encompasses. Various theories have pointed to the broadening of the concept of mental disorder over time. Concept creep theory, in particular, asserts that these semantic broadenings are generalised to many harm-related concepts and occur in two dimensions: horizontal and vertical creep. Examples of horizontal creep (by including qualitatively new conditions) and vertical creep (by including quantitatively milder forms of disorders) can be found in the professional definitions detailed in successive editions of the *DSM*.

Many of these changes in the public's concepts can be attributed to the rising attention to and investment in mental health. As mental health awareness has risen in more recent decades, people's concepts have evolved, but much less attention has been paid to examining these shifting concepts than to examining changes in the *DSM*. Therefore, the program of research aimed to shed lights on the former. Specifically, whether and to what extent concept creep has taken place in lay concepts remains unknown. Individuals may vary in their uptake of the conceptual changes occurring in their cultures, creating individual differences in the breadth of the concept of mental disorder. These individual differences involve the range of phenomena (horizontal breadth) and the range of severity thresholds (vertical breadth) at which individuals believe mental disorders are present.

The current program of research, therefore, aimed to examine laypeople's concept breadth, specifically the individual differences of this novel construct. This thesis reports eight studies across four chapters that focus on investigating this individual difference construct by understanding the broader landscape of lay concepts of abnormality and

demonstrating variations in concept and features (Study 1), developing and validating two scales to measure concept breadth (Studies 2-5), investigating the underlying mechanisms implicated in cultural differences in concept breadth (Studies 6-7), and examining the role of concept breadth in self-diagnosis and help-seeking (Study 8).

All studies in this thesis employed a large set of vignettes as the basis of their methodology. Specifically, 61 vignettes were created in Study 1 and an additional 40 vignettes were developed in Study 2. In Studies 3-8, scales measuring horizontal and vertical breadth contained 15 and 35 (or 10 for the vertical breadth short form) vignettes, respectively.

This vignette methodology represents significant advantages over previous studies that used open-ended interview questions, diagnostic labels without accompanying case descriptions, or a much smaller set of vignettes (e.g., Link et al., 1999; Phelan et al., 2000; Rusch et al., 2012; Star, 1955). Open-ended interview questions require people to provide an explicit definition, which is extremely difficult for abstract concepts like mental disorder, since most people do not hold a clear set of criteria that define such concepts (Kirmayer & Young, 1999; Lilienfeld & Marino, 1995). Providing labels or descriptions allows participants to make judgements based on implicit knowledge rather than struggling to generate an explicit definition themselves. Moreover, the intentional choice of using vignettes over labels was to control for individuals' preconceptions and misinformation, especially in relation to stigmatised labels, such as schizophrenia. Label-only studies also do not directly address the research question of what laypeople see as mental disorders, as diagnostic labels strongly imply that the conditions in question are disorders. While it may be more time-consuming to develop and assess people's concepts with vignettes, describing situations and conditions allows for more reliable measurement of individuals' concepts. Lastly, due to the complexity

of disorders and the focus on establishing the boundaries of people's concepts of disorder, only a large and diverse set of vignettes is sufficient to map lay concepts of disorder thoroughly.

### **Exploring Lay Concepts of Mental Disorder**

This thesis represents the first systematic effort to understand the breadth of the lay concept of mental disorder. The first step toward this goal is to investigate lay concepts both extensionally, by assessing the range of conditions people judge to be disorders, and intensionally, by uncovering the features associated with these judgements, as well as their alignments with professional concepts.

In Study 1, four terms, namely “mental illness”, “mental disorder”, “mental health problems”, and “psychological issue”, were found to be similar in meaning and breadth, with the exception that “psychological issue” represented a wider range of phenomena. The principal component analysis revealed four features that people use to determine whether an experience or behaviour is an example of a mental disorder. The four features are whether the phenomenon involves harm (distress and impairment), is rare and unusual, is stigmatised and blameworthy, and is environmentally caused, with the presence of harm as the strongest predictor of mental disorder judgements. Importantly, not only was the harm component the most influential feature in mental disorder judgements of hypothetical people in Study 1, but it was also the most influential factor in predicting self-diagnosis in Study 8.

Based on the four features analysed in Study 1, lay concepts of mental disorder broadly align with the harmful dysfunction analysis (Wakefield, 1992b), though with some notable differences. Apart from the shared centrality of harm, the other three features, namely statistical rarity, stigma, and environmental causation, are not part of the



professional definition and even contradict it. For example, the *DSM-5* specifies that mental disorders are not “expectable or culturally approved response[s] to common stressor[s] or loss[es]” nor “socially deviant behaviours and conflicts that are primarily between the individual and society ... unless the deviance or conflict results from a dysfunction in the individual” (APA, 2013, p. 20). This definition implies that a mental disorder should be a disturbance that goes beyond what is culturally or socially typical in response to life events and that it should reflect an internal dysfunction, rather than an expected reaction to external circumstances. This directly contradicts the environmental causation feature identified in the study, where participants considered conditions to be mental disorders specifically because they are seen as responses to environmental factors or life experiences, rather than resulting from genetic or biogenetic causes. This contradiction may help to explain some of the discrepancies between lay perceptions and the professional definition of mental disorder.

Study 1 provided some insights into the convergence between lay and professional concepts of mental disorder. Participants rated the *DSM-5* disorder vignettes significantly more likely to be disorders than the non-*DSM-5* condition vignettes. However, they judged 30% of the *DSM-5* disorders to be non-disorders and 46% of the non-*DSM-5* disorders to be disorders. This relatively weak alignment highlights a significant divergence between lay and professional concepts. This finding is especially surprising considering that the sample was recruited from the United States of America, where the *DSM* was developed and where mental health awareness is high. One might expect closer alignment between lay and professional concepts since mental health awareness is well-ingrained in American culture. The misalignment is noteworthy because it affects how people understand, respond to, and seek treatment for mental health issues. Public beliefs about mental disorders often

influence help-seeking behaviours, acceptance of diagnoses, and societal attitudes toward mental health. For instance, when laypeople view some *DSM-5* disorders as non-disorders, they would be less likely to accept or seek treatment for them or may stigmatise those people who do. Conversely, viewing non-*DSM-5* conditions as disorders may lead to increased medicalisation of everyday life distress, further “creeping” the concepts of mental health and ill-health. Therefore, examining lay concepts in relation to professional definitions is crucial for bridging perception gaps and enhancing public engagement with mental health, and appears to be a much-warranted effort even in countries with high levels of mental health awareness.

### **Establishing Concept Breadth as a Novel and Unique Construct**

#### ***Developing the Scales***

Having explored lay concepts of mental disorder and theorised that there are individual differences in what people see as mental disorders, finding a way to systematically measure the expansiveness of concepts of mental disorder was the essential next step. Concept breadth was expected to be a trait-like construct representing variations in individuals’ tendencies to view experiences and behaviours as examples of mental disorders. Through Studies 2-5, two scales were developed and validated to measure horizontal breadth (CB-H; the range of phenomena that one sees as mental disorders) and vertical breadth (CB-V; the severity threshold at which one sees as a mental disorder). The two breadth scales were developed from the pool of 61 vignettes used in Study 1 and an additional 40 vignettes. Through factor analyses, the horizontal and vertical breadth scales were reduced to 15 and 10 items (each of the latter containing vignettes at five levels of severity), respectively. Across Studies 3-8, both scales achieved good to very good internal consistencies ( $r = .77-.83$ ) and showed convergent, divergent, and predictive validities. The

two scales also correlated positively, ranging from .42 to .51 in all studies that employed the scales (Studies 4-8), suggesting that they are strongly related dimensions of concept breadth, yet not redundant with each other. A short form of the vertical breadth scale (CB-V-S) with a good reliability of .77 and a strong correlation of .87 with the CB-V scale was also created to enhance efficiency and reduce participants' burden. These reliable and valid CB-H and CB-V scales serve as the foundational tools essential to investigating concept breadth.

### ***Individual and Cultural Differences in Concept Breadth***

With the newly developed scales, individual variations in the breadth of the concept of mental disorder were documented across all studies. Uncovering their correlates and predictors was a major goal in the development and validation processes of the scales. In order to understand concept breadth, associations with demographic factors, such as gender, education level, income, age, political orientation, and ethnicity, were explored.

There are no obvious reasons why concept breadth would relate to gender, education level, or income, and findings from all studies with demographic data (Studies 4, 5, and 8) found no associations apart from some income group differences in Study 5. Participants with an annual income less than USD\$50,000 had broader concepts than those with income between USD\$100,000 and USD\$149,999. There is no apparent reason for this strange pattern of income group difference, and other studies in this thesis did not reveal similar group differences, suggesting they may not be robust.

Broadly consistent with predictions, age and political orientation were related to concept breadth. Consistent with the idea that the concept of mental disorder has been expanding over the past few decades, it was predicted that younger people would adopt a broader meaning than older people. Indeed, in two out of the three studies with demographic data (Studies 5 and 8), younger people were found to have broader concepts

of mental disorder. Perhaps an even more interesting finding is that concept breadth partially mediated the relationship between age and self-diagnosis. Given the current context of the youth mental health crisis, this finding implies that concept breadth may play a role in explaining the age effects in mental health-related outcomes and processes, including relatively high rates of diagnosis.

Political liberalism was also found to be positively correlated with concept breadth, although the effect appeared to be more stable for horizontal breadth (Studies 4, 5, and 8) than vertical breadth (Study 8). Individuals who had a liberal political orientation tended to have broader concepts of mental disorder. Both vertical and horizontal breadth partially mediated the relationship between political liberalism and self-diagnosis in Study 8, suggesting that conceptual differences in mental disorder may be the explanation for liberals being more likely to self-diagnose. The association supports the idea that concept creep may be driven by the rising sensitivity of harm which is reflected in the politically liberal moral agenda (Haslam, 2016), but with the caveat that the two earlier studies (Studies 4 and 5) did not consistently find a negative association between political liberalism and vertical breadth.

Despite strong predictions based on theoretical and previous empirical data showing cultural differences (i.e., Giosan et al., 2001; Glovsky & Haslam, 2003; Haslam & Giosan, 2002; Tse & Haslam, 2021), findings from Studies 4-8 on ethnic and cultural differences in concept breadth were not consistent and deviated from previous findings in Tse and Haslam (2021). Four out of the five studies (Studies 4-6, and 8) showed no ethnic differences in concept breadth. Two possible explanations may account for these inconsistencies.

First, amongst the four studies that showed no ethnic differences in concept breadth, three did not purposely focus on the cultural dimension. The three studies (Studies 4, 5, and 8) employed nationally representative samples in which participants from a variety of groups

were small in number, necessitating that comparisons focused dichotomously on White versus non-White groups. The latter group comprised Black or African Americans, Hispanic or Latino/a Americans, Asian Americans, and other Americans, each of which represents distinct cultures, with considerable differences both between and within these groups. Comparing White Americans and a mixed group of non-White Americans may not be effective in identifying cultural differences in concept breadth. This, however, does not explain the discrepancies in significant effects between Studies 6-7 and the previous study by Tse and Haslam (2021), all of which recruited equal numbers of White and Asian participants for feasible between-group comparisons.

Second, as explained in Chapter 4, recent evidence suggests that cultural differences may not be as prominent due to globalisation, and hence, acculturation of ethnic minorities such as Asian Americans to American cultures (Vargas & Kemmelmeier, 2012). Highly acculturated Asian Americans may hold similar concepts of mental disorder to their White counterparts, as shown in the absence of group differences found in individualism and collectivism values. This process may account for the absence of cultural differences in concept breadth found in Study 6. On the other hand, Study 7 recruited a university student sample in Australia which comprised more international students who may not be as acculturated to Australian culture. While this provides a potential explanation for the differences in significant findings between Studies 6 and 7, it does not explain why the previous study of Tse and Haslam (2021) found cultural differences in concept breadth between Asian and White Americans.

Regardless of the existence of cultural differences between Asian and White participants, mediation analyses in Studies 6 and 7 revealed some factors that partially account for the relationship between ethnicity and concept breadth. Specifically, social

distance partially mediated the ethnic differences in vertical breadth, whereas continuity beliefs and somatosensory symptoms amplification partially mediated and suppressed the ethnic differences in horizontal breadth, respectively. These findings underscore the complexity of cultural influences on concept breadth, indicating that multiple factors interact to shape how mental disorders are conceptualised across cultures. Understanding these mediators can provide valuable insights for culturally sensitive mental health practices by highlighting areas where cultural perceptions may either broaden or restrict definitions of mental ill health.

### **Associations Between Concept Breadth and Mental Health-Related Variables**

In order to establish concept breadth as a distinct construct, it is important to distinguish it from already existing constructs, particularly a seemingly similar construct—mental health literacy. In each instance where concept breadth was measured along with mental health literacy (Studies 4, 5, and 8), horizontal and vertical breadth either had no or weak correlations with two different mental health literacy scales. Further evidence against the redundancy of these constructs comes from discrepancies in their demographic predictors. Gender and education level consistently predicted mental health literacy, but they were found to be unrelated to concept breadth. In addition, concept breadth and mental health literacy predicted some mental health-related variables independently of one another. In several instances, concept breadth predicted stigma (social distance), self-diagnosis, previous experiences of mental disorders, and help-seeking behaviours above and beyond mental health literacy. These findings add to the growing evidence supporting the distinctiveness of concept breadth from mental health literacy, as discussed in Section 1.5.1. Concept breadth, therefore, captures variance in mental health-related variables that is unaccounted for by accurate mental health knowledge.

Apart from establishing the divergence between the two constructs, the relationship between concept breadth and mental health literacy also provides valuable insights. The weak yet positive association between concept breadth and mental health literacy indicates that people with broader concepts might identify more psychological phenomena as indications of mental disorder, thereby increasing their likelihood of correct identification, which would exemplify a higher level of mental health literacy. However, based on the same logic, there is an equally higher likelihood for individuals who have broader concepts to make false positive identifications, which is reflected in a lower level of mental health literacy. This contradictory influence of concept breadth on mental health literacy may explain the low or absent correlation between them. This interpretation aligns with the prevalence inflation hypothesis (Foulkes & Andrews, 2023), which argues that mental health awareness efforts could create positive outcomes like more accurate reporting of under-recognised disorders, but also lead people to interpret milder forms of conditions as mental disorders. The interplay between concept breadth and mental health literacy could possibly explain the underlying mechanisms of the prevalence inflation hypothesis.

Concept breadth also showed consistent relationships with various mental health-related variables across Studies 5 and 8. Holding broader concepts was associated with having a lower level of stigma, personal experiences of mental disorder, more positive help-seeking attitudes, previous help-seeking experience, and friends or family who had experiences of mental disorder. Some of these associations remained significant after controlling for mental health literacy. Study 8 also provided a direct test of the predictive power of concept breadth, showing it to be the second most influential predictor of self-diagnosis. Even when controlling for distress, stigma, and mental health literacy, having broader concepts predicted a higher likelihood of self-diagnosis. While these associations

and predictions suggest that concept breadth is a valuable new construct in the study of mental health, all studies used cross-sectional data, so it is not possible to make confident inferences about its potential causal implications.

In addition to establishing the construct's validity, the predictive power of concept breadth provides crucial insights into how concept breadth fits into the mental health research landscape. Its negative association with stigma extends the correlational finding with horizontal breadth from Tse and Haslam (2021) to include both horizontal and vertical breadth, indicating that broader concepts in both dimensions are consistently linked to lower stigma. The association remained significant even when controlling for mental health literacy, suggesting a robust effect between concept breadth and low stigma. The relationship between concept breadth and stigma may be bidirectional. Individuals with broader concepts of mental disorder are likely to see mental disorder as less severe and more common than people with narrower concepts. As mental disorder is perceived as more relatable and less threatening, people may have less fear and fewer negative stereotypes surrounding the concept, as indicated by a lower level of stigma. People with narrower concepts might associate the overall concept of mental disorder with more severe and incapacitating disorders, and thus, associate them with more negative stereotypes (e.g., dangerousness) and desire more social distance from them. Conversely, people with greater stigma may prefer a narrow concept of mental disorder as a way to distance themselves from potentially stigmatised conditions and people. For example, if they hold a more stigmatising view of mental disorder, they might be more reluctant to believe some symptoms are indicative of a mental disorder to avoid applying a negative term to themselves or others. These insights highlight the role of concept breadth as a factor that may shape stigma at individual, societal, and cultural levels. Broadening the concept of



mental disorder may therefore help reduce stigma by fostering an understanding that mental health experiences vary, making these experiences more relatable and less stigmatised.

### **Implications of the Breadth of the Concept of Mental Disorder**

The concept of mental disorder has profound implications for both theoretical frameworks and practical applications in the fields of psychology, psychiatry, and public health. The importance of the concept of mental disorder was implied in the *DSM-III-R* (APA, 1987), where its definition of mental disorder had "influenced the decision to include certain conditions in the *DSM-III* and the *DSM-III-R* as mental disorders and to exclude others" (p. xxii). This has been further underscored by Wakefield (1992b), who emphasised that since the definition provided in the *DSM-III-R* is theory-neutral, the proposed concept alone should offer the exclusive and direct justification for deciding whether conditions are disorders or not. For example, according to Wakefield's harmful dysfunction analysis, being illiterate brings harm to individuals in most of today's societies, but it is not due to a failure of internal mechanisms that prohibit someone from reading. Therefore, it is not a mental disorder. While judgements such as these are based in part on theoretical considerations, they also involve considerations of harm that partially depend on cultural considerations and lay perspectives. Recognising how lay conceptualisations of mental disorder vary and why they matter, as demonstrated in this thesis, is therefore vitally important. Understanding the ramifications of individual differences in concept breadth is crucial for understanding many mental health-related attitudes and behaviours and for developing effective public mental health strategies, campaigns, and interventions. The implications for theories, research, and practices of mental health will be discussed in the following sections.

### ***Theoretical Implications***

The findings of this thesis on concept breadth underscore the importance of understanding lay perspectives on the concepts of mental disorder. Lay perceptions have unfortunately been under-examined, especially quantitatively. The findings across the eight studies in this thesis program provide strong quantitative evidence that (1) there are patterns in the features by which laypeople categorise psychological phenomena as mental disorders; (2) individuals differ in the range and severity of phenomena seen as mental disorders; and (3) these differences are associated with several mental health-related outcomes. It is, therefore, essential to dedicate more attention and effort to considering lay concepts of mental disorder when developing theories of mental health and illness.

The findings on concept breadth have meaningful implications for two theories—concept creep and the prevalence inflation hypothesis in particular. Empirical data presented in this thesis illustrate support for variability in the breadth of people’s concepts of mental disorder. One interpretation of these individual differences is that concept creep has been at play over the past few decades, and individuals have adopted these broadened concepts to different extents and at different paces. Besides, the development of the new concept breadth measures in this research program provides empirical tools to quantify the extent of concept expansions, allowing for more precise investigations into how and why the concept of mental disorder expands over time. Specifically, the measures can help in establishing baselines and tracking changes for concept creep research on the concepts of mental disorder at the individual level. Furthermore, findings from this program of concept breadth research support the “mixed blessings” view of concept creep theory (Haslam, 2016). Expanded concepts of mental disorder could bring positive mental health outcomes by identifying problems that were previously overlooked. This is substantiated by the current

finding that broader concepts of mental disorder predicted a higher likelihood of self-diagnosis and more help-seeking behaviours, controlling for other influential mental health variables. Self-diagnosis is the first step in identifying these under-noticed symptoms and subsequently encourages help-seeking. While self-diagnosis and help-seeking could be beneficial, they could also lead to misdiagnosis and unnecessary treatment. This similarly provided empirical support for the prevalence inflation hypothesis by showing that broader concepts lead to a higher rate of self-diagnosis. Considering the concept creep theory and the prevalence inflation hypothesis are both relatively new theories receiving growing interest, many research directions and lines of inquiry are made possible by the new concept breadth measures.

### ***Research Implications***

A major contribution of this research program is the creation of the validated concept breadth measures, specifically focused on the concept of mental disorder, whereas previous studies on concept breadth (e.g., McGrath & Haslam, 2020; McGrath et al., 2019) have only studied individual differences in concepts of harm in general. McGrath and colleagues acknowledged that there are some fundamental differences between the concept of mental disorder and other harm concepts, such as bullying and aggression. Unlike the other harm concepts, the concept of mental disorder does not define clear roles of victim and offender, nor an overt source of threat. These conceptual differences suggest that the breadth of the concept of mental disorder might relate to other variables differently. The most notable empirical difference is the absence of a gender effect on concept breadth in the context of mental disorder. Given these differences, the breadth of the concept of mental disorder should be examined separately. The specific focus on the mental disorder concept builds the foundation for a potentially rewarding line of research.

Most uniquely, the new CB-H and CB-V scales are the first scales that simultaneously assess the two dimensions of concept breadth and are therefore able to distinguish factors that may differentially affect or be affected by these dimensions. For instance, having a politically liberal orientation is more reliably related to people perceiving a wider range of phenomena as mental disorders (horizontal breadth), but not as related to people seeing lower thresholds of criteria as disordered (vertical breadth). These measures provide a novel and systematic approach to understanding how individuals define and perceive mental disorders, filling a critical gap about lay perspectives in the existing literature.

Individual differences in concept breadth found in this program of research challenge the disproportionate attention to professional definitions over lay concepts of mental disorder. Accurately measuring and acknowledging variations in what individuals perceive as mental disorders can clarify discrepancies in mental health research findings and enhance the validity of studies. Regardless of its specific focus of investigations, all mental health research fundamentally builds on participants' conceptualisations of mental disorders with questions or measures that reference the generic terms "mental disorders" or "mental illness". However, without explicitly asking participants' interpretations of these umbrella terms, it remains uncertain whether all participants are referring to the same sets of conditions or share a similar breadth of concept, as demonstrated by the individual differences in concept breadth highlighted in this thesis.

For instance, in stigma research, widely used measures such as the Perceived Dangerousness of Mental Patient scale (Link et al., 1987) or the Self-Stigma of Mental Illness Scale (SSMIS; Corrigan et al., 2006) reference "mental patient" or "mental illness" without querying participants' definitions of these terms. However, whether or not a participant has a more expansive concept of mental disorder that includes less severe and more common

disorders such as social anxiety can drastically influence their stigmatising attitudes towards individuals with mental disorders. These individual differences in concept breadth could be one of the reasons for the inconsistent historical changes in stigma that have been observed (Phelan et al., 2000), as discussed in Section 1.5.2, since the overall trend in stigma encompassed attitudes toward mental disorders defined with varying expansiveness. While one could speculate that the inconsistency may be attributed to shifts in the definition of mental disorders over decades, limited research has concurrently measured these constructs together, providing only conjecture at best.

Similarly, discrepancies in other mental health research findings may arise from differences in breadth that are not explicitly defined in most research. Studies investigating the general concept of mental disorder, rather than specific disorders, should make a conscious effort to explicitly define or at least acknowledge the variations in concept breadth across individuals and studies. Explicit recognition of differences can help avoid miscommunication and ensure research findings are accurately interpreted and compared. Moving forward, researchers could assess participants' concept breadth using the newly developed measures to examine alignments between participants' perspectives and researchers' assumptions. This approach enhances the validity and interpretability of research findings. Additionally, individual differences in concept breadth should be accounted for in refining existing theories or developing new theories in future mental health studies.

In light of these insights from the development of concept breadth measures and research, research should take into consideration the reliability and validity of the concepts of mental disorder that are measured or implied in any mental health research.

### ***Practical Implications***

Although defining the concept of mental disorder may seem to be a theoretical endeavour primarily reserved for philosophers and theorists, the definition of mental disorder has very practical and tangible impacts on mental health practices in the real world (Link et al., 1999). At the individual level, whether someone meets a professional definition determines whether they receive a clinical diagnosis, and therefore, be eligible for mental health care and treatment (Wakefield, 1992a). Similarly, the very same definition could also determine an individual is not guilty of a crime due to their mental ill-health (Grachek, 2006), and therefore, likely to be sent to treatment facilities instead of prisons (Morse, 2011). At the societal level, including or excluding conditions based on the definition alters public policy and funding for research and treatment for those conditions (Swindle et al., 2000; World Health Organization, 2013). The definition of mental disorder, therefore, holds significant practical implications for both individual and societal outcomes, shaping everything from personal attitudes towards mental health to the implementation of public health policies.

The general public should be made aware of the individual differences in concept breadth and their consequences. For instance, when a person has a broader concept, they are more likely to ascribe mental disorder to self or others. Depending on contexts and subsequent actions, such a diagnosis may not be accurate or helpful. Being aware of their own concept breadth can help individuals monitor how their personal perceptions influence the assessment of their mental health or that of others. When an individual is aware that they hold a relatively narrow concept of mental disorder, they may be more conscious when dismissing symptoms that may indicate a legitimate mental health concern. Conversely, knowing that they hold a relatively broad concept, they should engage in self-monitoring

before judging or jumping to the conclusion that someone has a mental disorder. The self-awareness could therefore prompt a more careful consideration of symptoms in themselves or others, encouraging them to seek second opinions rather than relying solely on their personal concepts.

This awareness is especially important for people with authority, such as policy makers or law enforcement, whose decisions often determine the allocation of resources, support, or legal actions affecting individuals' lives and wellbeing. Similarly, this self-awareness is equally, if not more, critical for clinicians. Clinicians should be conscious of how their own concepts of mental disorder may influence their diagnostic practices, especially when their concepts are in conflict with the patient's cultural beliefs or the professional definition. While diagnostic manuals and practices are designed to be objective, a minimal level of subjectivity often arises from patients' reports and clinicians' judgement. Self-awareness may help clinicians to minimise the risk of over- or under-diagnosing certain conditions based on their own concept breadth. Therefore, fostering awareness of concept breadth in individuals is crucial to making better-informed decisions about their own and others' mental health.

Self-awareness of concept breadth is essential for clinicians in facilitating cultural competence in mental healthcare. As evident by the inclusion of the Culture and Psychiatric Diagnosis section in the *DSM-5-TR* (APA, 2022), even the professional concept of mental disorder acknowledges that cultural influences shape variations in concept breadth. Two studies in this thesis (i.e., Studies 6 and 7) focused solely on the role of culture in shaping concept breadth and found preliminary, albeit weak, evidence of cultural influence on what is considered a mental disorder. These studies also identified factors that contribute to cultural variability. Therefore, recognising concept breadth as a key component of culturally

sensitive mental healthcare is important. In today's society, patients are behaving more like consumers so they may not simply accept clinicians' diagnoses. They may also bring their preconceptions about their conditions, informed by their own cultural concepts and experiences (Gray et al., 2005; Nettleton et al., 2005; Pandey et al., 2003). Educational programs for clinicians should therefore include training components about concept breadth. This can ensure clinicians are well-informed about how patients' concept breadth influences their perception, interpretation, and reporting of symptoms.

Cultivating this awareness among clinicians can improve diagnostic accuracy by reducing the likelihood of misinterpreting culturally specific expressions of mental health concerns and symptoms. Clinicians could also encourage open dialogues to gain a deeper understanding of patients' cultural concepts and contexts. Understanding patients' concept breadth allows clinicians to respond sensitively to patients' cultural backgrounds and personal perspectives, fostering a respectful and empathetic patient-clinician relationship. By factoring in these insights into their practice, clinicians are better equipped to understand symptoms and behaviours from the patients' perspectives, which encourages patients to engage more fully in their care, increasing adherence to treatment plans and overall outcomes. When clinicians incorporate patients' concept breadth into the treatment processes, they demonstrate respect for their lived experiences and cultural views. Tailoring treatment programs to accommodate cultural conceptions, particularly those that differ from Western psychiatry, allows clinicians to create more holistic and culturally relevant treatment plans. As patients are more likely to engage with treatment plans that resonate with their cultural concepts and beliefs, this approach not only significantly improves treatment adherence, but also reduces the likelihood of inappropriate treatment.



Understanding concept breadth enhances cultural sensitivity in mental health, ultimately leading to better mental health outcomes for diverse populations.

Concept breadth's associations with other variables provide new insights for interventions to enhance mental health. Considering the complex relationship between concept breadth and mental health literacy, it is crucial to integrate concept breadth into mental health literacy interventions. This integration will ensure that individuals participating in these interventions do not over-interpret everyday life distress as mental ill health, thereby reducing unnecessary self-diagnosis and potential overuse of mental health services. Moreover, since concept breadth is consistently related to low stigma, it might be beneficial to incorporate concept breadth into existing anti-stigma interventions and campaigns that have been showing minimal long-term effects (Corrigan et al., 2015; Corrigan et al., 2012; Griffiths et al., 2014; Maunder & White, 2019; Morgan, Reavley, et al., 2018). Stigma around mental health often stems from rigid and culturally determined ideas of what is considered mentally "normal" and "abnormal," leading to limited understanding and prejudice toward mental disorders. Existing anti-stigma interventions generally focus on correcting misinformation about specific disorders, but incorporating a component of concept breadth may help challenge more fundamental beliefs about the overall concept of mental disorder. By validating a wider range of mental health experiences and perspectives, concept breadth promotes an open mindset, acknowledging that mental health and ill-health are not universally or rigidly defined. Awareness of the diverse definitions that individuals hold for mental disorders can reduce prejudice toward others' mental health experiences. Adopting an expanded concept is akin to learning a new framework, replacing oversimplified views on mental health and making it less likely for people to revert to stigmatising beliefs after interventions. Furthermore, expanding concepts would validate a

wider range of mental health views, and as a result, people who previously felt excluded may now be more engaged and committed to the interventions. Integrating concept breadth into existing interventions could thus create a more sustainable and broader impact on stigma reduction by challenging and expanding foundational understandings of mental health.

Concept breadth has clear implications for mental health help-seeking. Across all studies, there are reliable positive associations between concept breadth and help-seeking attitudes and behaviours, in terms of both past experience and future intention. This is consistent with the idea that recognition of the need for help is an essential link to help-seeking (Gum et al., 2009; Ho et al., 2008) and emphasises the importance of lay concepts (Link et al., 1991; Markowitz, 2001; Martin et al., 2000; Olafsdottir & Pescosolido, 2011). From the current findings, promoting broad concepts of mental disorder might encourage help-seeking if that is the public mental health goal. Not only does concept breadth determine whether people will seek help for their problems, but it could also guide what sources of help they will seek if they decide to (Olafsdottir & Pescosolido, 2011). For instance, if a person holding a narrow concept of disorder interprets psychiatric symptoms as evidence of a physical illness, they will seek help from general physicians rather than psychologists or psychiatrists. People with narrower concepts may also require different frameworks and approaches to treatment to facilitate the acceptance of their mental health issues compared to people with broader concepts. Concept breadth is critical in promoting timely and effective help-seeking behaviours.

To ensure the successful implementation of these implications, it is crucial to establish public policies and strategies that provide dedicated funding for the continuous development of research and the application of findings. Given that concept breadth

research is still in its early stages, sustained investment in this area is particularly important. A promising direction for future research involves designing and testing hybrid interventions and campaigns that integrate the concept of breadth into existing mental health initiatives.

Individual differences in the breadth of the concept of mental disorder have significant theoretical, research, and practical implications. They call for attention to lay concepts of mental disorder, impact the diagnostic judgements of individuals and clinicians, inform culturally sensitive mental healthcare, complement existing mental health awareness interventions, clarify the nuances in encouraging help-seeking, and guide future policy and resource allocation. By recognizing and addressing these individual differences, the mental health field can provide more personalised, effective, and culturally inclusive healthcare. Understanding and accommodating the diverse ways in which people conceptualise mental health is essential for advancing the theory, research, and practice of mental healthcare.

### **Limitations and Future Directions**

While the research program presented in this thesis revealed many valuable insights into the breadth of the concept of mental disorder, it is not without limitations. All studies, except Study 7, recruited participants from an online recruitment platform. Although most of these studies (Studies 1, 3-5, and 8) employed a nationally representative sample of the United States of America stratified by age, gender, and ethnicity, the reliance on online samples may introduce sampling bias. Participants recruited online must have access to digital devices and sufficient digital skills, potentially excluding people with limited Internet access or low digital literacy. To address this limitation, future studies should consider recruiting participants through other channels, such as in-person surveys at community centres, to ensure a more diverse sample in terms of digital literacy and access. This recruitment strategy would provide a more comprehensive understanding of concept

breadth across different demographic groups and help validate the findings obtained from online samples in this thesis.

All studies in this research program used cross-sectional data due to practical constraints on time and resources, which precludes drawing any causal conclusions. For instance, while concept breadth may predict help-seeking, it is also possible that individuals who have sought help may subsequently develop a broader understanding of mental disorder in the process. It is most likely that these relationships are bidirectional. Similarly, the mediation analyses in Studies 6-8 do not support causal inferences. Future longitudinal studies would illuminate the directionality of these relationships. Such an approach would be particularly beneficial in clarifying the inconsistent association between age and concept breadth by tracking changes across different life stages. Such a study could reveal how individuals' concept breadth evolves with age and experiences, offering insights into their dynamic nature and interrelationships. Additionally, experimental studies could further elucidate causal and dynamic relationships. Manipulating concept breadth experimentally would provide stronger evidence for its impact on judgment and behaviour.

Since this research program focuses on lay perspectives, none of the studies specifically examined concept breadth across different occupational subgroups, particularly on mental health professionals' perspectives. It remains unknown whether mental health professionals' concepts differ from those defined by the *DSM*. Mental health professionals, due to their extensive training and experience, are expected to have a high level of mental health literacy, allowing them to understand and apply the *DSM* criteria accurately. However, this does not necessarily mean that their concepts of mental disorder will exactly correspond to the *DSM*. Discrepancies in concept breadth may not only lie between the *DSM* and laypeople but also between the *DSM* and mental health professionals themselves.

Professionals might hold broader concepts than the *DSM* due to their daily interactions with diverse patient presentations and evolving clinical evidence and practices. Future studies could aim to conduct subgroup comparisons to provide a clearer understanding of these potential discrepancies. Such research could investigate how various factors, such as professional experience, training, and exposure to different clinical cases, contribute to differences in concept breadth between mental health professionals. This would provide valuable insights into how professional mental health literacy interacts with and potentially expands upon *DSM*-defined concepts.

Furthermore, while the two new scales show evidence of predictive validity and internal consistency, their retest reliability has yet to be established – which will be an important goal for future research on the scales. In addition, there was some evidence in Study 8 that although some SEM indices pointed to good fit, other indices were less definitive. Although some scholars argue that this disparity is not problematic (Lai & Green, 2016), it may represent a limitation of the study and suggest that future work should pay special attention to interrogating and improving model fit. Nonetheless, this thesis enabled a fruitful line of research as to study whether broadened mental disorder concepts primarily bring benefits or harm. The likely outcomes of concept breadth investigated in this thesis—self-diagnosis and help-seeking, all carry “mixed blessings”, similar to those of harm concept breadth in general (Haslam, 2016; McGrath et al., 2019). Having broad concepts allows individuals to be more likely to recognise symptoms as disordered, and therefore, engage in early intervention of their mental disorders and improve their mental health. On the other hand, overly broad concepts could lead individuals to label normal variations in distress as disordered, which could lead to misdiagnosis, unnecessary self-stigma, and inappropriate treatment. This may bring unwarranted harmful effects and financial burdens to the

individuals. Over-diagnosis and over-utilisation of mental health services may strain the public mental health resources, adding extra burdens to the already-strained mental health care system (Fellowes, 2023). This process, leading to a raised prevalence of mental disorders, is described by the prevalence inflation hypothesis (Foulkes & Andrews, 2023). Considering these complicated effects of concept breadth on individuals and the mental health system is a priority for future research.

## **Conclusion**

The concept of mental disorder has traditionally been framed either by systems of diagnosis or by theoretical analyses. Neither approach has a place for individual or cultural differences in what constitutes a disorder. However, these individual and cultural differences in how people conceptualise mental disorder have profound theoretical, research, and practical implications for psychology, psychiatry, and public health. A key way to conceptualise these differences is through the expansiveness of the concept of mental disorder, referred to here as concept breadth. These individual differences pertain to the range of phenomena (horizontal breadth) and the severity thresholds (vertical breadth) that individuals recognise as constituting a mental disorder. Understanding these differences is critical for developing more nuanced and effective approaches to mental health prevention, care, and intervention.

The complex issue of defining mental disorder should be a collective effort that incorporates points of view from multiple stakeholders, including scholars, professionals, and the public, where each can contribute their theoretical, clinical, and lived experience expertise, respectively. However, in the current state of research, the vast majority of the research effort has been focused on theoretical debates and the diagnostic systems developed by mental health professionals. The research program presented in this thesis is a

systematic attempt to empirically examine the neglected views of laypeople. The idea of concept breadth offers an illuminating perspective on how the public defines the boundaries of the concept of mental disorder and has promising links to existing well-researched mental health-related variables, such as mental health literacy, stigma, and help-seeking attitudes and behaviours. Concept breadth is an important new construct for understanding lay concepts of mental disorder that has significant implications for mental health research and practice.

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## Appendix A<sup>4</sup>

### Concept Breadth of mental disorder – Vertical scale (CB-V)

The following pages each present descriptions of five people who may or may not have a mental disorder. Their experiences vary from the **most severe** (at the **top** of the page) to the **least severe** (at the **bottom** of the page).

Your task is to decide which of the five people, if any, have a mental disorder by selecting "Yes" or "No". You must make a decision about every person.

For example, if you think **all of the people** have a mental disorder, you would rate the five descriptions (from top to bottom) Yes Yes Yes Yes Yes, as showed below.

Person 1 description	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Person 2 description	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Person 3 description	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Person 4 description	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Person 5 description	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No

If you think only the **two most severe** people have a mental disorder, you would rate Yes Yes No No No.

Person 1 description	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Person 2 description	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Person 3 description	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Person 4 description	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Person 5 description	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

<sup>4</sup> Formatting has been retained as presented as the Appendix document of the published article.

If you think the **four most severe** people have a mental disorder, you would rate Yes Yes Yes Yes No.

Person 1 description	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Person 2 description	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Person 3 description	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Person 4 description	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Person 5 description	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

If you think **none of the people** on the page have a mental disorder, you would rate No No No No No.

Person 1 description	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Person 2 description	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Person 3 description	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Person 4 description	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Person 5 description	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

There are no right or wrong answers to this task. We are interested in your personal opinions.

To make sure that you understand the instruction, here is an **example question**.

Please read the following descriptions about five people carefully from top to bottom and make a decision about each person.

Do any of these people described below have a mental disorder?

*Imagine after reading the descriptions (there is no actual descriptions below, only illustrating the format of the questions), you think that only the person with the most severe situation has a mental disorder, please respond accordingly.*

- |                      |                           |                          |
|----------------------|---------------------------|--------------------------|
| Person 1 description | <input type="radio"/> Yes | <input type="radio"/> No |
| Person 2 description | <input type="radio"/> Yes | <input type="radio"/> No |
| Person 3 description | <input type="radio"/> Yes | <input type="radio"/> No |
| Person 4 description | <input type="radio"/> Yes | <input type="radio"/> No |
| Person 5 description | <input type="radio"/> Yes | <input type="radio"/> No |

[Response validation: Yes, No, No, No, No]

[There are seven questions in this scale; each question starts with the introductory instructions and the question “Do any of these people described below have a mental disorder?”, each of the five vignettes in each question requires a yes or no answer. Question 1 below shows the full example of the instruction and question format that should be applied for all the other six questions.]

VS01\_Bipol

Please read the following descriptions about five people carefully **from top to bottom** and make a decision about each person.

**Do any of these people described below have a mental disorder?**

This person used to be very calm and quiet, but over the past few months, they have become much more talkative and easily irritated, which has caused a lot of physical and verbal conflicts with their friends. When asked about these changes, the person explained that they feel extremely restless, that their thoughts are racing all the time and that they cannot control their thoughts and behaviors.

☐ Yes

☐ No

This person used to be very calm and quiet, but over the past month, they have become much more talkative and easily irritated, which has caused a lot of verbal conflicts with their friends. When asked about these changes, the person explained that they feel very restless, that their thoughts are racing all the time, and that they cannot control their thoughts and behaviors.

☐ Yes

☐ No

This person used to be very calm and quiet, but over the past two weeks, they have become much more talkative and easily irritated, which caused a lot of conflicts with their friends. When asked about these changes, the person explained that they feel restless, that their thoughts are going faster than usual, and that they have trouble controlling their thoughts and behaviors.

☐ Yes

☐ No

This person is usually very calm and quiet, but over the past few days, they became much more talkative and easily irritated, which caused a lot of confusion amongst their friends. When asked about these changes, the person explained that they feel restless, that their thoughts are sometimes going faster than usual, and that they sometimes have trouble controlling their thoughts and behaviors.

☐ Yes

☐ No

This person is usually very calm and quiet, but for the past two days they were much more talkative and easily irritated, which surprised their friends. When asked about these changes, the person explained that they feel a little restless, that they are

☐ Yes

☐ No

thinking a little faster than usual, and that they sometimes have a little trouble controlling their thoughts and behaviors.

#### VS02\_MDD

This person has been feeling very sad, self-critical, and upset every day for the past year. They have lost a significant amount of weight and cannot fall asleep at night, so they feel very tired all the time. They are also completely unable to concentrate and think clearly, which has caused them to lose their job.

This person has been feeling very sad, self-critical, and upset every day for the past two months. They have lost a lot of weight and cannot fall asleep at night, so they feel tired all the time. They are also unable to concentrate and think clearly, which has impaired their ability to work.

This person has been feeling very sad, self-critical, and upset every day for the past month. They have lost some weight and cannot fall asleep at night, so they feel tired all the time. They are also unable to concentrate and think clearly, which has impacted their work performance.

This person has been feeling very sad, self-critical, and upset every day for the past two weeks. They have lost some weight and cannot fall asleep at night, so they often feel very tired. They have trouble concentrating and thinking clearly, which has somewhat impacted their work performance.

This person has been feeling very sad, self-critical, and upset most days for the past two weeks. They think they have lost some weight and cannot fall asleep easily at night, so they often feel tired. Sometimes, they have trouble concentrating and thinking clearly, but it does not affect their work.

#### VS03\_GAD

This person is extremely anxious about every part of their life. All the time, they worry a lot about big things like getting fired, as well as little things like forgetting to bring their keys. They find it impossible to stop worrying. These anxieties constantly tense up their muscles, make them restless, and ruin their concentration.

This person is very anxious about almost every part of their life. Frequently throughout the day, they worry a lot about big things like getting fired, as well as little things like forgetting to bring their keys. They find it very difficult to stop worrying. These anxieties almost always tense up their muscles, make them restless, and affect their concentration.

This person is very anxious about many parts of their life. On and off throughout the day, they worry a lot about big things like getting fired, and sometimes about little things like forgetting to bring their keys. They find it very difficult to stop worrying. These anxieties often tense up their muscles, make them restless, and affect their concentration.

This person is very anxious about some parts of their life. Occasionally, they worry about big things like getting fired, and sometimes about little things like forgetting to bring their

keys. They find it quite difficult but not impossible to stop worrying. These anxieties sometimes tense up their muscles and make them restless.

This person is anxious about specific parts of their life. Occasionally, they worry about big and small things related to their job, such as getting fired or forgetting to bring their keys. They find it quite difficult but not impossible to stop worrying. These anxieties sometimes make them a little restless.

#### VS04\_OCD

At least three times every day, this person has persistent thoughts that they are contaminated in some way. The only way they can make the thoughts go away is to wash their hands with soap for at least 30 minutes. If they don't wash their hands, they feel extremely anxious. They have tried to stop their handwashing but have been completely unable to stop it. This problem led to the ending of a close relationship and makes it very difficult to hold down a job.

At least one time every day, this person has persistent thoughts that they are contaminated in some way. The only way they can make the thoughts go away is to wash their hands with soap for at least 15 minutes. If they don't wash their hands, they feel very anxious. They have tried to stop their handwashing but have been unable to stop it for more than a month. This problem causes difficulties in their close relationship and makes it hard to hold down a job.

Most days, this person has persistent thoughts that they are contaminated in some way. The main way they can make the thoughts go away is to wash their hands with soap for at least 5 minutes. If they don't wash their hands, they feel quite anxious. They have tried to stop their handwashing and have been able to stop doing it for up to one month. This problem causes some difficulties in their close relationship and is embarrassing at work.

Some days, this person thinks that they are contaminated in some way. The main way they can make the thoughts go away is to wash their hands with soap for at least 5 minutes. If they don't wash their hands, they feel a little anxious. They have tried to stop their handwashing and can usually control it unless they are under stress. This problem causes some embarrassment with friends and at work.

Occasionally, this person thinks that they are unclean. One way they can make the thoughts go away is to wash their hands with soap for at least 5 minutes. If they don't wash their hands, they don't feel too bad, but they prefer to do it. They have tried to stop their handwashing and can usually control it. This handwashing generally doesn't cause them many problems.

#### VS05\_DID

This person seems to have completely different personalities at different times. Usually, they are very shy and reserved, but sometimes they are very outspoken and confident. When they are questioned about the unusual things they have done, they have no recollection of doing them. These striking alterations in their behavior have severely affected their personal relationships and made them lose their jobs.

This person seems to have completely different personalities at different times. Usually, they are very shy and reserved, but sometimes they are very outspoken and confident. When they are questioned about the unusual things they have done, they claim to have no recollection of doing them. These alterations in their behavior have significantly affected their personal relationships and impaired their work performance.

This person seems to have different personalities at different times. Usually, they are very shy and reserved, but sometimes they are very outspoken and confident. When they are questioned about unusual things they have done, they cannot explain them. These alterations in their behavior have significantly affected their personal relationships.

This person seems to behave in very different ways at different times. Usually, they are shy and reserved, but sometimes they are outspoken and confident. When they are questioned about their inconsistent behavior, they cannot explain them. These alterations in their behavior have made other people have trouble trusting them.

This person seems to behave in different ways at different times. Sometimes, they are shy and reserved, but at other times they are outspoken and confident. When they are questioned about their inconsistent behavior, they say they are a bit temperamental. These alterations in their behavior sometimes confuse other people.



### VS06\_Binge

This person eats much more than most people every day. Even when they don't feel hungry, they eat a lot very quickly until they are uncomfortably full to the point of feeling sick. Noticing this pattern of over-eating for the past few months, they feel extremely upset about it, hate themselves, but also feel completely helpless about controlling how much they eat.

This person eats much more than most people several days a week. Even when they don't feel hungry, they eat a lot very quickly until they are uncomfortably full to the point of feeling a little sick. Noticing this pattern of over-eating for the past few months, they feel very upset about it, are critical of themselves, but also feel helpless about controlling how much they eat.

This person eats more than most people sometimes. Even when they don't feel hungry, they eat a lot very quickly until they are uncomfortably full. Noticing this occasional pattern of over-eating for the past few months, they feel upset about it but also feel a little helpless about controlling how much they eat.

This person eats more than most people occasionally. Even when they don't feel hungry, they eat a lot very quickly until they are uncomfortably full. Noticing this occasional pattern of eating for the past few months, they feel very concerned about it but also feel it's very challenging to control how much they eat.

This person eats more than most people once in a while. Even when they don't feel hungry, they eat a lot very quickly until they are uncomfortably full. Noticing this pattern of eating once in a while for the past few months, they feel concerned about it but feel it's somewhat challenging to control how much they eat.

### VS07\_AvoidPer

This person is extremely afraid of disapproval and rejection and often thinks they have been rejected or judged negatively when they have not. They make up excuses so they never have to join any group activities at work. They have extremely low self-esteem and assume that all people are judgmental and critical. They are too scared to meet and talk to new people in social situations and as a result they are completely socially isolated. They rarely interact with people even if they are certain that they will be accepted unconditionally.

This person is very afraid of disapproval and social rejection. They make up excuses to avoid any group activities at work. They have very low self-esteem and assume that all people are judgmental and critical. They are very scared to meet and talk to new people in social situations and as a result they are socially isolated. They rarely interact with people unless they are certain that they will be accepted unconditionally.

This person is very afraid of disapproval and social rejection. They make up excuses to avoid group activities at work. They have low self-esteem and assume that most people are judgmental and critical. They are very reluctant to meet and talk to new people in

social situations. They are unwilling to interact with people unless they are certain that they will be accepted unconditionally.

This person is afraid of disapproval and social rejection. Sometimes they make up excuses to avoid group activities at work. They have relatively low self-esteem and assume that most people are judgmental and critical. They are often reluctant to meet and talk to new people in social situations. They are unwilling to initiate interactions with people unless they are certain that they will be accepted unconditionally.

This person dislikes disapproval and social rejection. Occasionally, they make up excuses to avoid group activities at work. They have relatively low self-esteem and assume that some people are judgmental and critical. They don't want to meet and talk to new people in social situations. They are unwilling to initiate interactions with people unless they are fairly sure that they will be accepted by them.

[Scoring: Yes = 1; No = 0. Sum up all scores, range = 0 – 35 where 35 indicates a large vertical breadth of mental disorder.]

## Appendix B<sup>5</sup>

### Concept Breadth of mental disorder – Vertical scale – Short form (CB-V-S)

Please select your response to the statement “Does this person have a mental disorder?” in terms of “Yes” or “No”.

#### This person has a mental disorder.

- V1 This person shows few emotions on their face. They are interested in some forms of social activity but prefer to sit alone sometimes for half an hour or so. They hold a few very unusual beliefs, and their speech is sometimes a little hard to follow. ☐ Yes ☐ No
- V2 This person is usually very calm and quiet, but over the past few days, they became much more talkative and easily irritated, which caused a lot of confusion amongst their friends. When asked about these changes, the person explained that they feel restless, that their thoughts are sometimes going faster than usual, and that they sometimes have trouble controlling their thoughts and behaviors. ☐ Yes ☐ No
- V3 This person has been feeling very sad, self-critical, and upset every day for the past two weeks. They have lost some weight and cannot fall asleep at night, so they often feel very tired. They have trouble concentrating and thinking clearly, which has somewhat impacted their work performance. ☐ Yes ☐ No
- V4 This person is very anxious about some parts of their life. Occasionally, they worry about big things like getting fired, and sometimes about little things like forgetting to bring their keys. They find it quite difficult but not impossible to stop worrying. These anxieties sometimes tense up their muscles and make them restless. ☐ Yes ☐ No
- V5 Some days, this person thinks that they are contaminated in some way. The main way they can make the thoughts go away is to wash their hands with soap for at least 5 minutes. If they don't wash their hands, they feel a little anxious. They have tried to stop their handwashing and can usually control it unless they are under stress. This problem causes some embarrassment with friends and at work. ☐ Yes ☐ No

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<sup>5</sup> Formatting has been retained as presented as the Appendix document of the published article.

- V6 This person seems to behave in very different ways at different times. Usually, they are shy and reserved, but sometimes they are outspoken and confident. When they are questioned about their inconsistent behavior, they cannot explain them. These alterations in their behavior have made other people have trouble trusting them. ☐ Yes ☐ No
- V7 This person eats more than most people sometimes. Even when they don't feel hungry, they eat a lot very quickly until they are uncomfortably full. Noticing this occasional pattern of over-eating for the past few months, they feel upset about it but also feel a little helpless about controlling how much they eat. ☐ Yes ☐ No
- V8 This person has been causing trouble ever since they entered high school half a year ago. They are a little cruel to animals and they sometimes bully and initiate fights with other students. They sometimes damage other people's property but show some remorse when they do. ☐ Yes ☐ No
- V9 Once a month, this person lies to their family to visit a casino to play poker. Whenever they lose big money, they stay a little longer at the casino to chase their losses. Their gambling has led to minor financial losses and occasionally impacted their work performance. They tried quitting gambling once, but the success was short-lived. ☐ Yes ☐ No
- V10 This person is very afraid of disapproval and social rejection. They make up excuses to avoid group activities at work. They have low self-esteem and assume that most people are judgmental and critical. They are very reluctant to meet and talk to new people in social situations. They are unwilling to interact with people unless they are certain that they will be accepted unconditionally. ☐ Yes ☐ No

[Scoring: Yes = 1; No = 0. Sum up all scores from 10 questions, range = 0 – 10 where 10 indicates a large vertical breadth of mental disorder.]

## Appendix C<sup>6</sup>

### Concept Breadth of mental disorder – Horizontal scale (CB-H)

[This scale starts with the introductory instructions below, and then all 15 vignettes are followed by the statement “**This person has a mental disorder.**” And a 6-point Likert scale response, 1 = *Strongly disagree* and 6 = *Strongly agree*. Question 1 below shows the full example of the instruction and question format that should be applied for all the other 14 questions in this scale.]

#### HS\_Intro

You will be reading a series of descriptions about some people. Please read each description and rate the extent to which you agree or disagree with the subsequent statement. We are interested in your personal views, there is no right or wrong answer.

#### HS01\_Persist

This person has been feeling down for the past few years. They often feel a sense of hopelessness and have low self-esteem, but these feelings come and go day by day. On bad days their work suffers, but on better days they can work effectively.

**This person has a mental disorder.**

- ☐ Strongly disagree (1)
- ☐ Disagree (2)
- ☐ Somewhat disagree (3)
- ☐ Somewhat agree (4)
- ☐ Agree (5)
- ☐ Strongly agree (6)

#### HS02\_SocAn

This person is terrified of public speaking because they are worried that they will be judged negatively by others. They fear the embarrassment if they say the wrong things. Therefore, they have been avoiding any events or occasions that require them to speak in front of people.

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<sup>6</sup> Formatting has been retained as presented as the Appendix document of the published article.

#### HS03\_PTSO

This person witnessed a terrible car accident a month ago and since then they have been having nightmares about the accident every other night. The dream wakes them up in fear which keeps them awake and can sometimes last for the whole day. Although the accident and feeling are vivid in the dream, they fail to recall any specific details about the accident when asked. Because of this accident, they are easily startled by loud noises and they avoid the area where the accident had happened.

#### HS04\_Soma

This person has been experiencing back pain for a long while. They are extremely worried that their back pain will lead to them being paralyzed. They have spent months consulting multiple doctors at various hospitals. All doctors have prescribed painkillers and assured them there is no risk of becoming paralyzed.

#### HS05\_Insom

This person has had trouble sleeping since they were a child. For most nights, it takes hours for them laying on the bed before they can fall asleep. This has led to them having low energy and poor concentration for their daytime activities.

#### HS06\_Delirium

This person has been suffering from alcohol withdrawal. In the past few days, after quitting drinking, they have had difficulty focusing and thinking clearly. They also feel disoriented and often forget things that just happened. Sometimes these confusions get very serious, and their speech can become incoherent.

#### HS07\_Narcis

This person feels special and is very proud of their achievements. They believe that only similar high-status people are worth their time and they expect people to recognize their importance and give them special treatment. They lack sensitivity and empathy for the feelings of others, and often exploit and manipulate people around them for personal gain.

#### HS08\_Cheat

This person has been in a long-term romantic relationship with the same partner. However, for the past few years, they have been cheating on their partner. When their partner discovered this, they begged for forgiveness, but their cheating continued soon after.

#### HS09\_Jealousy

This person constantly suspects that their romantic partner is cheating on them. They question their partner's whereabouts and sometimes follow them to see who they are meeting. Their partner has complained about these controlling behaviors, which often resulted in arguments. The person has tried to stop doubting their partner's fidelity, but their doubts always come back.

#### HS10\_Selfishness

This person always puts themselves first and has no regard for other people. For example, they cut in front of other people in queues and play their music very loud late at night when others are trying to sleep. They don't share important information with others, and they are unwilling to help others.

#### HS11\_SocMedia

This person uses social media almost constantly. Their parents often complain about their use of social media, and this has caused a lot of serious conflicts in the past. The person has learned to lie about the amount of time they spend on social media to avoid having arguments. If their friends suggest an activity that temporarily stops them from using social media, such as playing games, they usually don't take part in the activity.

#### HS12\_ChronicFati

This person has been feeling extremely tired for the past few months. Even when they sleep more than 10 hours the night before, they do not feel refreshed when they get up. This has been affecting their job performance since they are unable to concentrate and stay alert for their working hours.

#### HS13\_Gaming

This person plays a lot of online games and they have been skipping work to play games at an increasing frequency over the past year. They have lost interest in spending quality time with their partner and constantly think about games even when they are not playing. When their partner complains about this and forces them to stop playing, they become very irritable and sad for a couple of days. Repeatedly, they lie to their partner so they can play online games and this conflict eventually led the couple to separate.

#### HS14\_Dhat

This person suffers from premature ejaculation and also thinks that they are losing semen-like white fluid when urinating. They have become very anxious and upset about this because they see semen as a "vital fluid" and think losing it equates to a loss of health. They also feel a loss of appetite and energy.

#### HS15\_Imposter

This person is a high achiever, but they constantly feel that their achievements have been based on pure luck. They doubt their competence and fear that they cannot live up to people's expectations of them. They always work very hard to make sure that no one will find out that they are a fraud.

[Scoring: Sum up all scores from 15 questions, range = 15 – 90 where 90 indicates a large horizontal breadth of mental disorder.]

## Appendix D

**Table A1**

*Amount of Variance Explained by Each Factor Predicting Current Formal Diagnosis*

Factor		Outcome	R <sup>2</sup>
Concept breadth	→	Current formal diagnosis	0.034
Distress	→	Current formal diagnosis	0.004
Impairment	→	Current formal diagnosis	0.054
Mental health literacy	→	Current formal diagnosis	0.095
Stigma	→	Current formal diagnosis	0.035

**Table A2**

*Amount of Variance Explained by Each Factor Predicting Self-Diagnosis and Help-Seeking*

*Behaviours*

Factor		Outcome	R <sup>2</sup>
Concept breadth	→	Self-diagnosis	0.032
	→	Recent formal help-seeking	0.001
Distress	→	Self-diagnosis	0.117
	→	Recent formal help-seeking	-0.002
Impairment	→	Self-diagnosis	-0.004
	→	Recent formal help-seeking	-0.002
Mental health literacy	→	Self-diagnosis	0.004
	→	Recent formal help-seeking	0
Stigma	→	Self-diagnosis	0.005
	→	Recent formal help-seeking	0.042