

BADILLO-WINARD, EMILY J. M.A. Measuring Mental Illness Identity. (2023)  
Directed by Dr. Kari Eddington. 76 pp.

Despite the potential impact of mental illness on identity, there is a dearth of research examining the concept of illness identity in individuals with mental health concerns. Dimensions of illness identity that have been identified in populations with physical health conditions include engulfment, rejection, acceptance, and enrichment. To date, there are no measures of mental illness identity that comprehensively assess all of these aspects of illness identity in populations with mental health concerns. The absence of psychometrically sound measures of mental illness identity poses a significant obstacle to the advancement of research in this area. This study investigated the psychometric properties of an adapted measure of illness identity, the Illness Identity Questionnaire (IIQ), for use in populations with mental health concerns. The present study assessed the factor structure, reliability, and validity of the Illness Identity Questionnaire-Mental Health (IIQ-MH). Confirmatory factor analyses drew on data collected from a diverse sample of adults ( $N = 1137$ ) at two academic institutions. A CFA demonstrated that a four-factor structure yielded acceptable model fit. The final IIQ-MH contained 24 items assessing identification with mental health concerns in four domains. Results indicated that the four subscales of the IIQ-MH showed acceptable internal consistency and test-retest reliability. Analyses examining convergent, discriminant, and criterion validity of the IIQ-MH also yielded promising results. Findings suggest future avenues for further investigation using the IIQ-MH for comprehensively assessing personal identification with mental health concerns (mental illness identity) in adults.

MEASURING MENTAL ILLNESS IDENTITY

by

Emily J. Badillo-Winard

A Thesis  
Submitted to  
the Faculty of The Graduate School at  
The University of North Carolina at Greensboro  
in Partial Fulfillment  
of the Requirements for the Degree  
Master of Arts

Greensboro

2023

Approved by

---

Dr. Kari Eddington  
Committee Chair

© 2023 Emily J. Badillo-Winard

## DEDICATION

*For my partner and best friend, Sadhu, my daughter, Lili, my parents, Shari and Luis, my brothers, Diego and Theo, my late grandmother, Sue, and my late great-grandfather, Arthur.*

*Thank you for your endless love, encouragement, and support on this journey.*

APPROVAL PAGE

This thesis written by Emily J. Badillo-Winard has been approved by the following committee of the Faculty of The Graduate School at The University of North Carolina at Greensboro.

Committee Chair

\_\_\_\_\_  
Dr. Kari Eddington

Committee Members

\_\_\_\_\_  
Dr. Ethan Zell

\_\_\_\_\_  
Dr. Gabriela Livas Stein

April 12, 2023

Date of Acceptance by Committee

April 11, 2023

Date of Final Oral Examination

## ACKNOWLEDGEMENTS

I want to acknowledge the tremendous support and feedback that Dr. Kari Eddington provided throughout the thesis process. Kari continually pushed me to think beyond my boundaries and has made me a better researcher and writer. Thank you for believing in me, Kari. I am also extremely appreciative of the feedback and guidance of my thesis committee members, Dr. Ethan Zell and Dr. Gabriela Livas Stein, which strengthened this document and provided direction for my upcoming comprehensive examinations. I am also extremely thankful to the entire DTRP Lab, including Ariana, Jordan, Jaimie, Maddie, and Jack for helping move this project along and providing support along every step of the way.

## TABLE OF CONTENTS

LIST OF TABLES .....	viii
LIST OF FIGURES .....	ix
CHAPTER I: INTRODUCTION.....	1
Illness Identity .....	1
Linking Illness Identity to Mental Illness Identity .....	6
Mental Illness Identity Measurement .....	9
The Illness Identity Questionnaire.....	12
The Present Study.....	13
CHAPTER II: METHODS .....	17
Participants .....	17
Measures.....	17
Attentive Responding Scale-Infrequency Subscale .....	17
Current Mental Health Concerns .....	18
Illness Identity Questionnaire-Mental Health.....	18
The Rosenberg Self-Esteem Scale.....	19
The Internalized Stigma of Mental Illness Inventory .....	19
The Depression Anxiety Stress Scales.....	20
Study Procedures .....	20
Data Analytic Plan.....	21
Data Cleaning .....	21
Analyses.....	22
CFA.....	22
Reliability.....	23
Validity .....	23
CHAPTER III: RESULTS.....	25
Overview .....	25
Demographics.....	25

Hypothesis 1: Confirmatory Factory Analysis .....	26
Hypothesis 2: Internal Consistency Reliability and Temporal Stability .....	27
Bivariate Correlations.....	28
Hypothesis 3: Convergent Validity .....	29
Hypothesis 4: Discriminant Validity .....	30
Hypothesis 5: Criterion Validity .....	31
CHAPTER IV: DISCUSSION .....	34
Summary of Findings .....	34
Hypothesis 1: Confirmatory Factor Analysis .....	34
Hypothesis 2: Internal Consistency and Test-Retest Reliability .....	37
Hypotheses 3 and 4: Concurrent Validity .....	37
Hypothesis 5: Criterion Validity .....	39
Study Limitations .....	40
Implications and Future Directions .....	41
REFERENCES .....	44
APPENDIX A: ILLNESS IDENTITY QUESTIONNAIRE – MENTAL HEALTH .....	55
APPENDIX B: TABLES AND FIGURES .....	57



## LIST OF TABLES

Table B1. Summary of Participant Recruitment.....	57
Table B2. Demographic Characteristics of Usable Sample.....	58
Table B3. Illness Identity Questionnaire – Mental Health Model Fit Indices.....	59
Table B4. Illness Identity Questionnaire – Mental Health Item Descriptions and Standardized Factor Loadings .....	60
Table B5. Internal Consistency Reliability and Test-Retest Reliability of the IIQ-MH .....	63
Table B6. Means and Standard Deviations for Each Subscale of the IIQ-MH by Sample .....	64
Table B7. Differences between GTCC and SONA Samples on Key Variables.....	65
Table B8. Means, standard deviations, and correlations .....	66
Table B9. Associations .....	67
Table B10. Multiple Linear Regressions of the IIQ-MH and DASS-21 .....	68
Table B11. Frequencies of Current MH Concerns for GTCC and SONA Cumulatively.....	69

## LIST OF FIGURES

Figure B1. Attentive Responding Scale – Infrequency Subscale .....	71
Figure B2. Current Mental Health Concerns .....	72
Figure B3. Number of Endorsed MH Concerns .....	73
Figure B4. Rosenberg Self-Esteem Scale .....	74
Figure B5. The Internalized Stigma of Mental Illness Inventory .....	75
Figure B6. The Depression Anxiety Stress Scales.....	76

## CHAPTER I: INTRODUCTION

### **Illness Identity**

There is extant literature to suggest that people need consistency among their self-perceived characteristics to form a coherent and unified self-concept or identity (for a review, see Higgins, 1987). A person may experience identity discrepancy when their self-concept or identity is challenged in a way that their current state or actual way of being does not match their hopes, desires, or ideal self (Higgins, 1987). The process of navigating the impact of an illness on one's life can result in significant changes in one's attitudes, beliefs, and behaviors. These changes can lead to a sense of identity discrepancy, where an individual's self-concept is at odds with their current state of being. When a person is diagnosed with an illness, their goals and activities may be disrupted. As people navigate these changes, they may reassess, redefine, and reinterpret their experiences of illness and make adjustments to their attitudes, beliefs, behaviors, and identities (Sulik, 2011). In this way, the emergence and progression of an illness can interrupt a person's life and result in a new illness identity (Peters & Brown, 2022).

Insomuch as an illness disrupts one's ideal sense of self, a new illness identity may emerge that may or may not reconcile with other previously held personal identities (Adams et al., 1997). This new illness identity can encompass a range of dimensions, including how the individual perceives themselves in relation to their illness and how they feel about their illness. Importantly, the development of a new illness identity is not always a negative experience. Illness identities can help individuals deal with medical uncertainty, changes in their lives due to the development of an illness, and can help people reconstruct their self-concept in ways that accommodate the illness (Barker, 2002; Charmaz, 1995; Sulik, 2011). Within the literature,

illness identity is defined as the degree to which an individual integrates an illness or disability status into one's self-concept (Oris et al., 2016). The process of developing a new illness identity can be complex and can involve a range of psychological and social factors.

The Social Identity Approach (SIA) has been increasingly used as a framework for understanding health-related experiences (Cruwys et al., 2014; Haslam et al., 2009). An integration of two related theories, social identity theory (Tajfel, 1974) and self-categorization theory (Turner et al., 1987), SIA focuses on the nexus between individuals and groups. SIA starts from the assumption that in order to understand a person's thoughts, beliefs, and actions, it is important to first understand how that person categorizes themselves in terms of unique individual traits (as "I" and "me") and in terms of a particular social identity (as "us" and "we" versus "they" and "them") (Jetten et al., 2017; for an in-depth overview, see Spears, 2011). Within this framework, self-meaning is derived from a social system of evaluations that lead a person to recognize in-groups and out-groups, even when there are no evident intergroup tensions (Tajfel et al., 1972). People see themselves as sharing category membership with others as a shared social identity (as "us") or not (as "them") and strive to maximize the positive distinctiveness of their own groups (Haslam et al., 2009; Kreindler et al., 2012; Turner et al., 1979a).

Individuals typically belong to many groups, and tend to identify more strongly with some groups over others (Kreindler et al., 2012). The relative prominence of an individual's multiple identities is fluid and changes as the context in which the individual operates changes (Turner et al., 1987). To the extent that social-structural features allow people to define the groups they identify with as positive, distinct, and enduring, a person may feel a motivational preference to draw a sense of purpose and direction from those groups (Cruwys et al., 2014;

Turner et al., 1979b). An important consequence of an individual's identification and self-categorization with an in-group, is that a person may find a guide for socially sanctioned conduct in otherwise ambiguous or confusing situations (Tajfel et al., 1971). In this way, group membership that becomes integrated with an individual's self-concept affects the way they perceive and interact with others (Jetten et al., 2017). Previously held personal identities may be disrupted when a person is diagnosed with an illness and as the social identity approach would posit, people may look to others with a similar diagnosis to make meaning of their lives. An illness identity relates an understanding of the self and affiliation with others on the grounds of sharing similar experiences with symptoms, suffering and diagnostic labels (Barker, 2002).

As people seek to navigate the social world and redefine their self-concept with the inclusion of a diagnostic label, a growing body of research has found that one's illness identity, as opposed to individual characteristics, can determine symptom appraisal and severity (St. Claire et al., 2008). In a study by St. Claire and colleagues (2008), increased salience of participant's illness identity led to a marked increase in reporting more severe symptoms as a function of their illness. That is, those participants who were encouraged to self-categorize in terms of a given illness group, were more likely to report experiencing more severe symptoms aligned with that illness group's typical symptom profile.

In a similar vein, identification with an illness group can also impact attitudes towards treatment (Luyckx et al., 2018; Meyer & Lamash, 2021; Oris et al., 2018; Peters & Brown, 2022; Rassart et al., 2021; Raymaekers et al., 2020; Van Bulck et al., 2021). Research by Adam et al., (1997) found that whether people take prescribed medication in response to symptoms is affected by processes of social identification. Specifically, in participants with reported physical

symptoms that fit a certain diagnosis, those who were self-categorized as members of a group with that illness identity were much more likely to take their medication than those who did not.

While illness identity may be influenced by social factors such as societal attitudes towards illness or the experiences of others with similar conditions, it is ultimately a personal and subjective experience that varies from individual to individual (Charmaz, 1995). It is an individualized experience that is shaped by an individual's unique experiences and perceptions of their illness, as well as their personal values, beliefs, and coping strategies (Sulik, 2011). While identity operates on a continuum of processes that are both personal and social, illness identity is best understood as a component of personal identity rather than a social identity.

Illness identity has received growing attention within the context of physical illnesses such as congenital heart disease (Van Bulck et al., 2021), type 1 diabetes (Rassart et al., 2021), inflammatory bowel disease (Peters & Brown, 2022; Rassart et al., 2022), celiac disease (Meyer & Lamash, 2021), refractory epilepsy (Luyckx et al., 2018), chronic inflammatory systemic diseases (Oris et al., 2018), asthma (Adams et al., 1997), and fibromyalgia (Barker, 2002; Morea et al., 2008). Within these populations, illness identity as it relates to one's personal sense of self in relation to an illness, is conceptualized to include four distinct dimensions: acceptance, rejection, engulfment, and enrichment. In these studies, acceptance and enrichment refer to adaptive illness identity integration states whereas rejection and engulfment are states that capture a lack of illness identity integration (Oris et al., 2016).

'Acceptance' is defined as the degree to which one accepts an illness as part of one's identity, in addition to, but not at the expense of, other components of the self, and without feeling overwhelmed by the illness (Ingersgaard et al., 2022). Individuals with illnesses maintain other personal, relational, and social roles while maintaining their illness identity on the

periphery, without being overwhelmed by their illness identity, but not denying their illness either (Morea et al., 2008). Individuals with high levels of acceptance do not deny that they have an illness or that they are obligated to perform their associated duties, but they also do not feel overwhelmed or reduced to being a person with an illness (Rassart et al., 2021).

‘Enrichment’ refers to the degree that an individual finds an illness to bring about positive changes in their life and thus boosts their self-concept similar to the concepts of benefit finding, posttraumatic growth, and stress-related growth (Helgeson et al., 2006; Oris et al., 2018). In a recent meta-analysis, Helgeson and colleagues (2006) found that benefit finding has been extensively studied in individuals with health stressors (i.e., a diagnosis of a physical illness such as cancer or lupus), those who have experienced a traumatic event (i.e., experience of war, natural disaster, assault), and in parents of children diagnosed with autism. Enrichment requires that an individual not only integrates their illness and adverse circumstances associated with their illness into their identity (i.e., acceptance), but also to make meaning of their circumstances and positively reframe them (Rassart et al., 2022). Positive changes can include an increased appreciation for life, changed life priorities, increased personal strength, and more positive interpersonal relationships (Tedeschi & Calhoun, 2004).

‘Rejection’ refers to the degree to which an illness is deflected or rejected as part of one’s identity which can be a form of cognitive resistance to stigma, as the illness identity is viewed as a threat to one’s self-concept (Oris et al., 2018; Thoits, 2016). Individuals with high levels of rejection avoid their illness, in an effort to protect their self-concept from the threat of stigmatizing attitudes. They may feel uncomfortable thinking or talking about their illness, deny the existence of their illness and avoid the associated responsibilities of illness management (Oris et al., 2016).

‘Engulfment’ is defined as the degree to which an illness dominates a person’s identity and daily life at the expense of other important aspects of the self (Oris et al., 2018). For individuals with high levels of engulfment, their illness becomes the most central feature of their identity and intrudes up on many life domains such as school/work, hobbies, and social relationships (Morea et al., 2008; Rassart et al., 2022). In a recent study by Rassart et al., (2022), higher levels of engulfment were associated with increased depressive symptoms, lower satisfaction with life, a poorer health status, and a worse health-related quality of life in individuals with inflammatory bowel disease. These associations were similarly found in an earlier study conducted by Oris et al., (2018) with adults with chronic illness that found engulfment was related to more depressive and anxiety symptoms, more illness symptoms, and increased pain.

### **Linking Illness Identity to Mental Illness Identity**

Despite the uptick in research on illness identity for those with physical illnesses, illness identity as it relates to mental illness remains underexplored and findings from the available literature have been inconsistent. Acceptance of a mental illness identity has been linked with higher levels of self-esteem (Warner et al., 1989), self-empowerment and quality of life (Corrigan et al., 2010). In a study by Yanos et al., (2020) participants with diagnosed schizophrenia and schizoaffective disorder that did not agree that they had psychiatric or mental problems at the time of the study (i.e., exhibited a lack of insight or a lack of acceptance), experienced more positive and negative symptoms and decreased interpersonal functioning compared with participants who exhibited higher levels of acceptance. Acceptance of a diagnostic label can provide a sense of relief by way of understanding that symptoms result from an independent disease thus externalizing difficulties that arise from mental health concerns



(Hayne, 2003; O'Connor et al., 2018). In a study of adolescents and young adults, Leavey (2005) found that for those with a mental illness, accepting a diagnostic label allowed participants to externalize their difficulties from their 'core' self and thereby protect their self-concept.

As such, similar to physical illnesses, integrating a mental illness into one's sense of self may be an important task to achieve desired treatment outcomes and long-term management. But the literature has been mixed. Another group of researchers posit that people may interpret and experience mental illness as stigmatizing, hopeless and damaging to self-esteem (Yanos et al., 2010). This group of researchers point to findings that show that many people diagnosed with psychiatric disorders experience self-stigma or internalized stigma, and believe negative stereotypes about people with mental illness and apply those stereotypes to themselves (Dubreucq et al., 2021). Whereby an illness identity refers to the process of incorporating an illness into one's self-concept, internalized stigma on the other hand refers to the internalization of negative attitudes and beliefs held by others about a particular illness or condition.

Internalized stigma is a process by which a person with a stigmatized identity believes negative stereotypes and assumptions associated with their condition and applies those beliefs to themselves (Boyd et al., 2014; Corrigan et al., 2010). Internalizing negative stereotypes about people with mental illness can lead one to believe that there is no possibility for recovery (Yanos et al., 2020). A meta-analysis by Mak et al., (2007) observed that internalized stigma is moderately negatively related to mental health related outcomes. Similarly, in a systematic review of the literature, Clement et al., (2015) found that stigma has a small-to-moderate-sized negative effect on help-seeking intentions or behaviors for mental health-related concerns. Yanos et al., (2010) suggests that internalized stigma creates disempowering narratives which can lead to a vicious cycle of symptom severity and further exacerbate mental health conditions.

Labeling theorists alike have stated that the impact of deviant labels on well-being depends on societal acceptance and recognition (Marcussen et al., 2019). Insofar as a label represents a stigmatized group, a person may choose to reject that label in order to protect their self-concept. Rejecting a mental illness identity may buffer individuals from stigmatizing attitudes and reduce the threat of a diagnostic label to a person's self-concept (Thoits, 2016). Along these lines, a study conducted by Stolzenburg and colleagues (2017) found that anticipated stigma may impede the process of self-identifying as someone with a mental illness in individuals with untreated mental health problems. Label-avoidance, or rejecting a mental illness identity, was found to be a direct and active decision to avoid personal stigma and perceived social devaluation (Stolzenburg et al., 2017; Yanos et al., 2020). Rejection might limit the emotional impact of diagnostic labels, thus keeping one's self concept intact through avoiding identification with a mental illness. While some people with mental illness may find meaning and comfort within diagnostic labels (Estroff et al., 1991, 2004), others may object strongly to the idea that they have a disorder and find diagnostic labels degrading.

A study by Cruwys and Gunaseelan (2016) quantitatively demonstrated that social identification with a mental illness was associated with the experience of discrimination, and poorer well-being in a sample of adults with depression. Here, they found that although all participants had experienced, or were experiencing, clinical levels of depression symptoms, it was the subjective psychological connection with the label 'depressed person' (i.e., social identification) and not one's official diagnostic label that matters for mental health. Among participants who self-identified as depressed, characterizing depressed people in terms of depression symptomology was associated with their own poorer well-being compared with

participants who did not identify as depressed but reported having experienced or currently experiencing symptoms consistent with clinical levels of depression.

Engulfment is a concept taken from the mental health field regarding self-evaluation in schizophrenia (for a review see Vining & Robinson, 2016). In this context, engulfment has been defined as the situation in which one's illness and experience in the patient role evolve to dominate the individual's self-concept (McCay & Seeman, 1998; Morea et al., 2008). The process of engulfment involves the individual assigning to themselves the role of a sick person or a patient, which gradually becomes the central aspect of their self-identity (Gelencser et al., 2022). Estroff (1991) suggested that engulfment occurs through progressive role constriction, in which the chronicity of symptoms leads to the loss of successive valued social roles until only the chronic patient role remains. In a study conducted by McCay and Seeman (1998) among adults with schizophrenia and schizo-affective disorders, engulfment was associated with hopelessness, low self-esteem, and feelings of being ineffectual. In a recent study by Gelencser and colleagues (2022), engulfment was significantly and positively correlated with depressive symptoms ( $r = 0.38$ ;  $p < 0.001$ ) in a sample of 140 adults with schizophrenia. While engulfment has been studied in populations with schizophrenia, engulfment has not been studied in populations with other forms of mental illness or mental health concerns.

### **Mental Illness Identity Measurement**

Notwithstanding the studies and measures listed below, identification with a mental illness is often conceptualized narrowly in terms of acceptance. Oftentimes, studies ask participants to evaluate a one-item prompt that asks participants whether they have a mental illness (*yes/no*) as a marker of identification with a mental illness (McCay & Seeman, 1998; see Thoits, 2016 for an example). Identification with a mental illness is nuanced, and one-item

yes/no questions do not capture the complexity of illness identity. Our ability to advance our understanding of mental illness identity rests on developing measures that incorporate how individuals integrate a mental illness identity into their self-concept across multiple dimensions.

The few existing measures of mental illness identity that presently exist do not simultaneously assess for the degree to which an individual integrates a mental illness into their self-concept across the four dimensions of illness identity noted above (i.e., acceptance, rejection, engulfment, and enrichment). For example, the Centrality of Event Scale (CES; Berntsen & Rubin, 2006) is one such scale that was designed to measure how a stressful event shapes one's self-concept and the meaning they attribute to other experiences in persons with PTSD. Sample items related to engulfment include "This event has become a reference point for how I understand myself and the world," and "This event has not become a central part of my life story (reverse-scored)." The CES has shown excellent internal consistency and discriminant validity and positively correlates with symptoms of posttraumatic stress disorder, depression, social anxiety, and prolonged grief (Gehrt et al., 2018; Vermeulen et al., 2022). Despite these strengths, the CES does not measure individual levels of acceptance, rejection, or enrichment and is not relevant to other mental health conditions.

Another such measure, the Modified Engulfment Scale (MES; McCay & Seeman, 1998) was designed to quantitatively analyze engulfment in individuals with schizophrenia, as engulfment is an important focus area in schizophrenia research. Items are rated on a 5-point Likert scale from 1 (*completely false*) to 5 (*completely true*). The MES has good internal consistency reliability and construct validity, and has been used to evaluate the outcome of therapeutic interventions (McCay & Seeman, 1998). While the MES has items that tap into acceptance (i.e., "In my opinion, I am mentally ill"), rejection (i.e., "My mind is normal") and

enrichment (i.e., “I can look forward to being married or having a steady partner”), it was not designed to formally quantify dimensions of illness identity and has not been used in this way in the literature.

In another study, Cruwys and Gunaseelan (2016) asked participants with depression 11 items designed to measure multiple dimensions of identification with a mental illness to include identity solidarity (e.g., “I feel a bond with other people who have depression”), identity satisfaction (e.g., “Being part of a group of people who have depression gives me a good feeling”), identity centrality (e.g., “The fact that I have depression is an important part of my identity”), identity self-stereotyping (e.g., “I am similar to the average person who has depression”), and identity homogeneity (e.g., “People who have depression have a lot in common with each other”). Items were rated on a 7-point Likert scale from *strongly disagree* to *strongly agree*. While the subscales for identity solidarity ( $\alpha = .86$ ) and identity centrality ( $\alpha = .83$ ) demonstrated excellent reliability, the authors did not report on the psychometric properties of the other identity dimensions measured in this paper and these items have not been evaluated elsewhere. An aspect of enrichment seems to be captured by the item for identity satisfaction (i.e., “Being part of a group of people who have depression gives me a good feeling”) although the authors do not explicitly build upon this connection. While the identity centrality items also relate to acceptance, rejection, and engulfment, these associations are also unclear.

A recent study by Schomerus et al., (2019) included the Self Identification as Having Mental Illness Scale (SELF-I) which was designed by the researchers in a previous study (Schomerus et al., 2012) to measure the extent participants appraise any symptoms they currently experience as evidence for a mental illness. The scale consists of five items that are rated using a 5-point Likert scale from 1 (*don't agree at all*) to 5 (*agree completely*). Items are “Current issues

I am facing could be the first signs of a mental illness,” “The thought of myself having a mental illness seems doubtful to me” (reverse coded), “I could be the type of person that is likely to have a mental illness,” “I see myself as a person that is mentally healthy and emotionally stable” (reverse coded), and “I am mentally stable, I do not have a mental health problem” (reverse coded). The scale has shown good internal consistency (Cronbach’s  $\alpha$  of .90 and .83; Schomerus et al., 2012, 2019, respectively) although other studies have not established its psychometric validity. While the SELFI taps into acceptance and rejection of a mental illness identity, enrichment and engulfment items are absent from this measure.

Drawing from identity theory and stigma research, Marcussen and colleagues (2021) recently developed a semantic differential scale to quantitatively measure mental illness as a stigmatized identity. Here, participants are presented with 16 adjective-pairs that represent stereotypes associated with mental illness across the self-view and reflected appraisals (i.e., taking the perspective of generalized others, significant others, and similar others). The focus of this strategy is on classifying meaning structures in terms of evaluation (good to bad), potency (strong to weak) and activity (active to passive). While this measure taps into how individuals with mental health concerns perceive themselves and how they believe others see them as it relates to stigmatized identities, it was not designed to assess how individuals with mental health concerns integrate mental illness into their self-concept.

### **The Illness Identity Questionnaire**

The first measure to include all four theoretical dimensions of illness identity in one unified scale was the Illness Identity Questionnaire, which includes four subscales for rejection, acceptance, engulfment, and enrichment (IIQ; Oris, 2016). This 25-item scale was initially developed for use in individuals with type 1 diabetes and has since been validated across

numerous physical health conditions including congenital heart disease (Van Bulck et al., 2021), type 1 diabetes (Rassart et al., 2021), inflammatory bowel disease (Peters & Brown, 2022; Rassart et al., 2022), celiac disease (Meyer & Lamash, 2021), refractory epilepsy (Luyckx et al., 2018), chronic inflammatory systemic diseases (Oris et al., 2018), asthma (Adams et al., 1997), and fibromyalgia (Barker, 2002). The IIQ has been validated for use in adolescents aged 12-18 (Meyer & Lamash, 2021), and adults 18-73 (Andonian et al., 2021). It has also been translated into Hebrew (Meyer & Lamash, 2021), Danish (Ingersgaard et al., 2022), German (Andonian et al., 2021), and Dutch (Luyckx et al., 2018).

A confirmatory factor analysis conducted by Oris et al., 2016 indicated that the hypothesized four-factor model (including two error correlations between related items within a single latent factor) had an adequate fit ( $df = 316$ ;  $\chi^2 = 659.58$ ,  $p < 0.001$ ; RMSEA = .05; CFI = 0.92; SRMR = .063). The IIQ has demonstrated good internal consistency across four subscales, with Cronbach's  $\alpha$  of .90 for engulfment, .84 for rejection, .85 for acceptance, and .90 for enrichment (Oris et al., 2016). Latent growth curve modeling analyses across a three-year span indicated that the different illness identity dimensions showed relatively high stability across four time points with mean-level changes across waves being relatively small (Rassart et al., 2021). While there is good evidence to suggest that the IIQ can be used in people with physical illnesses, no studies to date have validated the IIQ in populations with mental illnesses.

### **The Present Study**

Illness identity in populations with physical illnesses has been extensively studied and has been found to encompass several dimensions, including acceptance, rejection, enrichment, and engulfment. In contrast, mental illness identity has received less attention, and the existing literature has largely focused on acceptance/rejection and engulfment separately in clinical

populations with diagnosed mental illness. However, there are some important differences between mental illness identity and illness identity in populations with physical illnesses. For example, mental illness is often stigmatized and misunderstood, which can lead to feelings of shame, guilt, and social isolation. Also, mental illness may impact an individual's sense of self in more profound ways than physical illness, as it can impact cognitive and emotional processes, leading to a greater sense of disconnection from one's pre-illness identity. Additionally, mental illness exists on a spectrum and people often live with mental health concerns for years without seeking a formal diagnosis or treatment. Overall, while there are some similarities between mental illness identity and illness identity in populations with physical illnesses, there are also important differences that warrant further exploration and understanding.

Preliminary findings on mental illness identity have been inconsistent. While some researchers have found that identifying as mentally ill is adaptive and associated with greater levels of self-esteem and overall quality of life, others have found identification with a mental illness to be associated with experiences of internalized stigma and experiences of discrimination, poor wellbeing, and low self-esteem. A problem with currently available identity measures is that they lack items and scale ranges that allow for the assessment of identification with a mental health diagnosis across the four states of illness identity simultaneously, namely acceptance, rejection, engulfment, and enrichment. Thus, the goal of the present study was to assess the psychometric properties of an existing measure of illness identity (IIQ), adapted to focus on mental health concerns (IIQ-MH). In this adapted version of the IIQ, the word “diabetes” was replaced with “mental health concerns” in each of the IIQ’s questionnaire items (e.g., item 8 “I accept being a person with diabetes” became “I accept being a person with mental health concerns”). Mental health concerns were chosen as the intended target of the IIQ-



MH over and above mental illness, as mental illness operates on a continuum of severity and those who have mental health concerns, even without a diagnosis, are also intended to be able to use this measure. In service of the main objective of this study, the present study sought to test the following hypotheses:

1. The IIQ-MH will replicate four distinct, but related dimensions shown in previous studies of the IIQ. These dimensions will include engulfment, rejection, acceptance, and enrichment.

2. It was expected that the IIQ-MH will have adequate reliability as a measure of identification with mental health concerns. Internal consistency and test-retest reliability were evaluated to assess for reliability.

3. There will be a moderately positive relationship between the IIQ-MH's acceptance and enrichment domains and a measure of self-esteem to establish convergent validity. Conversely, there will be a moderately negative relationship between the IIQ-MH's rejection and engulfment domains and a measure of self-esteem to establish convergent validity.

4. The strength of the relationship between scores on the IIQ-MH's rejection domain and a measure of a related but separate construct will be weakly positive to provide discriminant validity evidence. This similar but distinct construct will be internalized stigma. Conversely, the relationship between scores on the IIQ-MH's acceptance and enrichment scores will be weakly negative with internalized stigma. The relationship between engulfment and internalized stigma is theoretically unclear and was also explored here.

5. Higher scores on the engulfment and rejection domains of the IIQ-MH will be positively correlated with symptoms of depression, anxiety, and stress to establish criterion validity of the IIQ-MH's engulfment and rejection domains. Conversely, the IIQ-MH's

acceptance and enrichment domains of the IIQ-MH will be negatively correlated with symptoms of depression, anxiety, and stress to establish criterion validity of the IIQ-MH's acceptance and enrichment.

## CHAPTER II: METHODS

### **Participants**

To evaluate the psychometric properties of the IIQ-MH, data were collected from adults with current mental health concerns at two academic institutions. Data were collected from students enrolled in introductory psychology classes at Guilford Technical Community College (GTCC) and the University of North Carolina at Greensboro (UNCG) SONA Experiment Scheduling System. All participants were awarded course credit toward their psychology course research participation requirement. Table B1 lists the institution, sample sizes, dates of data collection, and number of participants excluded from analyses for survey missingness, duplicate responses, and inattention in each sample. Participants were dropped if they had elevated scores on a measure of invalid responding, did not endorse having current mental health concerns, failed to complete at least half of the items, or if they were duplicate responders (i.e., had previously taken the survey in mass screening at an earlier administration).

### **Measures**

#### ***Attentive Responding Scale-Infrequency Subscale***

ARS-IS is a 6-item scale designed to identify whether participants are attentive and responding conscientiously using a 5-point Likert scale (Maniaci & Rogge, 2014; Figure B1). Items range from 0 (not at all true) to 4 (very true). Sample items include “I’d rather be hated than loved,” and “It feels good to be appreciated (reverse-scored).” Scores are summed and a score above 7.5 indicates that the participant did not provide valid responses.

### ***Current Mental Health Concerns***

Based on standard assessments of current symptoms (Figure B2), participants were asked to endorse any current emotional or mental-health concerns from a checklist of 62 mental-health related symptoms. A dummy coded variable was created to indicate the presence or absence of mental health concerns for each participant (coded “0” for no current mental health concerns and “1” for current mental health concerns). See Table B11 for frequencies of endorsed mental health concerns. On average, participants endorsed 10 mental health concerns each (see Figure B3 for a frequency distribution for number of endorsed mental health concerns per person).

### ***Illness Identity Questionnaire-Mental Health***

The IIQ-MH is an adapted version of the Illness Identity Questionnaire (IIQ; Oris et al., 2016; Appendix A). In line with the IIQ authors’ recommendations, and as adapted to other populations with chronic diseases (Meyer & Lamash, 2021; Oris et al., 2018), the word “diabetes” was replaced with “mental health concerns” in each of the IIQ’s questionnaire items (e.g., item 8 “I accept being a person with diabetes” became “I accept being a person with mental health concerns”).

The IIQ-MH consists of 25 items developed by the researchers to measure mental illness identity. Four dimensions of illness identity captured by the IIQ include rejection, acceptance, engulfment, and enrichment. Sample items include “I refuse to see my mental health concerns as part of myself (rejection subscale),” “I have learned to accept the limitations imposed by my mental health concerns (acceptance subscale),” “My mental health concerns completely consume me (engulfment subscale),” and “Because of my mental health concerns, I have become a stronger person (enrichment subscale.” Items are rated on a 5-point Likert-type scale, ranging

from 1 (*strongly disagree*) to 5 (*strongly agree*). Mean scores are calculated for each subscale and higher scores indicate higher levels of each illness identity domain (Van Bulck et al., 2021).

### ***The Rosenberg Self-Esteem Scale***

The RSES (Rosenberg, 1965; Figure B4) is a 10-item scale that measures global self-worth. The RSES contains an equal number of positively (e.g., people feeling satisfied with life) and negatively (e.g., people feeling they are failures) worded items. Sample items include “On the whole, I am satisfied with myself,” and “I feel I do not have much to be proud of (reverse-scored).” Items are rated on a 4-point Likert-type scale, ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). Scores are summed and higher scores indicate higher levels of self-esteem. Its predictive validity, internal consistency, and test–retest reliability have been well established (Schmitt & Allik, 2005). In the current sample, internal consistency was good (Cronbach’s  $\alpha = .90$ ).

### ***The Internalized Stigma of Mental Illness Inventory***

The ISMI-10 (Boyd et al., 2014; Figure B5) is a 10-item scale that measures internalized stigma. Sample items include “Having a mental illness has spoiled my life,” and “I can have a good, fulfilling life, despite my mental illness (reverse-scored).” Items are rated on a 4-point Likert scale, ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). Mean scores are calculated and a cut-point of 2.50 is used to create a dichotomized variable that indicates the presence or absence of high internalized stigma (Ritsher & Phelan, 2004). The ISMI-10 has been shown to have good internal consistency (Cronbach’s  $\alpha = .75$ ; Boyd et al., 2014). In the current sample, internal consistency was acceptable (Cronbach’s  $\alpha = .77$ ).

### ***The Depression Anxiety Stress Scales***

The Depression, Anxiety, and Stress Scales (DASS-21) is a 21-item measure that was developed to assess for symptoms of depression, anxiety, and physiological stress, respectively (Antony et al., 1998; Figure B6). The DASS-21 uses a 4-point Likert scale of frequency or severity of the participants' experiences over the last week. Items range from 0 (*did not apply to me at all*) to 3 (*applied to me very much, or most of the time*). Sample items include “I felt that life was meaningless (depression subscale),” “I felt I was close to panic (anxiety subscale),” and “I felt I was rather touchy (stress subscale).” Scores for each subscale are summed and then multiplied by 2, with higher scores indicating higher levels of depression, anxiety, and stress. The DASS-21 is not intended to diagnose disorders relating to depression, anxiety, or stress. The DASS-21 has been shown to have acceptable internal consistency across diverse racial groups in college student populations (depression:  $\alpha = .83$ , anxiety:  $\alpha = .78$ , stress:  $\alpha = .87$ ; Norton, 2007). In the current sample, internal consistency of each respective subscale of the DASS-21 was also acceptable (depression:  $\alpha = .90$ , anxiety:  $\alpha = .84$ , stress:  $\alpha = .82$ ).

### **Study Procedures**

Participants provided informed consent if they were at least 18 years of age. Participants who were under 18 provided informed assent and consent was received from their legal parent or guardian via email. This study targeted participants with current mental health concerns to enhance variability of experiences with mental illness. Participants recruited through mass screening were invited to complete the study if they indicated current mental health concerns. Professors of introductory psychology courses at GTCC invited all students enrolled in their classes to complete the current study. As participants at GTCC could not be pre-screened, participants who did not endorse current mental health concerns were subsequently excluded

from all analyses, as filling out the IIQ-MH without having any mental health concerns would not have made sense. All participants completed the study via online self-report measures through Qualtrics in exchange for extra course credit.

## **Data Analytic Plan**

### ***Data Cleaning***

Data cleaning and analyses took place primarily in R Studio (2020) and Mplus, Version 8.8. Duplicate checks in Microsoft Excel were run on the Mass Screening and SONA data to identify repeated email addresses and SONA study IDs across semesters and once flagged, were dropped from the useable sample, retaining only the first time point a participant completed mass screening or SONA study ( $n = 35$ ). Descriptive statistics (i.e., mean, median, standard deviations, frequency distributions, and percentage of sample comprising each categorical variable) were run to check for missingness with the data. Participants who completed less than 50 percent of all items in each administration were dropped from their respective recruitment pools ( $n = 305$ ). A lack of participant attentiveness can result in measurement error variance that adversely affects correlational and factor analyses (Maniaci & Rogge, 2014). The ARS-IS was used as a measure of invalid responding to identify cases that didn't meet a cut score of 7.5 and flagged cases were removed from the data set ( $n = 138$ ). Participants were also removed from the useable sample if they did not endorse having any current mental health concerns ( $n = 39$ ). Missing data was handled using full information maximum likelihood estimation (FIML), a method with fewer biases than other approaches to handling missing data (Enders & Bandalos, 2001). Overall, there was very little missing data, with only rejection and acceptance each missing one participant's score overall. To note, Recruitment group (i.e., UNCG vs GTCC) was

included as a covariate in the latter half of analyses, when appropriate, to examine possible group differences.

## *Analyses*

### *CFA*

Given the novelty of the Illness Identity Questionnaire-Mental Health, a confirmatory factory analysis was used to assess Hypothesis 1: that the IIQ-MH will replicate four distinct but related dimensions shown in previous studies of the IIQ to include engulfment, rejection, acceptance, and enrichment. There is no one single item to participant ratio for all scale development scenarios. Researchers have previously followed a rule of thumb of at least 10 participants for each scale item for an ideal ratio of respondents to items of 10:1 (Nunnally, 1978) however other researchers have proposed using sample sizes of 300 or more in order to observe an acceptable comparability of patterns (Guadagnoli & Velicer, 1988). Recruitment through UNCG and GTCC was largely successful with 1137 participants included in the confirmatory factor analysis of the IIQ-MH and clearly exceeded these sample size recommendations.

Using Mplus version 8.8, four factor and three factor models of the IIQ-MH were evaluated for model fit. Multiple model fit statistics and theoretical considerations rather than a single criterion were used to judge optimal model fit (Bentler, 2007). Model indices were inspected and model fit was evaluated based on the following guidelines: comparative fit index (CFI) value close to or greater than .90 (Fan et al., 1999), standardized root square mean residual (SRMR) value less than .08 (Hu and Bentler, 1999), and a RMSEA value with a 90% confidence interval that does not include values greater than .10 (MacCallum et al., 1996).



### ***Reliability***

Once an appropriate model fit was established, internal consistency statistics were calculated (Hypothesis 2). Cronbach's alphas for the IIQ-MH factor scores were calculated as a measure of internal consistency. McDonald's hierarchical omegas were also calculated as a more conservative and robust measure of internal consistency (Dunn et al., 2014). Mean scores of each subscale of the IIQ-MH were calculated for each participant and used in subsequent analyses. For those participants who completed the IIQ-MH during the SONA mass screening and during the study follow-up, test-retest reliability was calculated by evaluating intra class correlation coefficients (Weir, 2005) to assess the degree to which the participants' performance on the IIQ-MH is repeatable. The IIQ-MH subscale's test-retest reliabilities were calculated across the entire test-retest interval, which spanned between 2 and 387 days ( $M = 33.68$  days,  $SD = 45.02$  days). To note, only 4 participants exceeded a one semester interval for completing the IIQ-MH at Time 2.

### ***Validity***

Convergent validity is established when variables on one measure correlate highly with variables that are theoretically similar to the construct being measured (Groth-Marnat & Wright, 2016). Pearson's correlations between domains of the IIQ-MH and self-esteem were evaluated to establish convergent validity, such that there will be a moderately positive relationship between the IIQ-MH's acceptance and enrichment domains and a measure of self-esteem to establish convergent validity. Conversely, there will be a moderately negative relationship between the IIQ-MH's rejection and engulfment domains and a measure of self-esteem to establish convergent validity (Hypothesis 3). Discriminant validity is indicated by predictably low or weak correlations between the measure of interest and other measures that are supposedly not

measuring the same variable or concept (Boateng et al., 2018). Pearson's correlations between domains of the IIQ-MH and internalized stigma were evaluated to establish discriminant validity such that strength of the relationship between scores on the IIQ-MH's rejection domain and a measure of a internalized stigma will be weakly positive to provide discriminant validity evidence. Conversely, the relationship between scores on the IIQ-MH's acceptance and enrichment scores will be weakly negative with internalized stigma. The relationship between engulfment and internalized stigma is theoretically unclear and was also explored here (Hypothesis 4). Criterion validity is the degree to which there is a relationship between a given score and performance on another measure of relevance (DeVellis & Thorpe, 2022). Pearson's correlations and subsequent linear regressions between domains of the IIQ-MH and symptoms of depression, anxiety, and stress from the DASS-21 were evaluated to establish criterion validity, such that higher scores on the engulfment and rejection domains of the IIQ-MH will be positively correlated with symptoms of depression, anxiety, and stress to establish criterion validity of the IIQ-MH's engulfment and rejection domains. Conversely, the IIQ-MH's acceptance and enrichment domains of the IIQ-MH will be negatively correlated with symptoms of depression, anxiety, and stress to establish criterion validity of the IIQ-MH's acceptance and enrichment (Hypothesis 5).

## CHAPTER III: RESULTS

### Overview

As shown in Table B1, participants in each of the 3 samples completed the IIQ-MH along with additional measures to address all study hypotheses. Data from GTCC and Mass Screening addressed Hypotheses 1 (confirmatory factor analysis of IIQ-MH). Data from GTCC, Mass Screening, and SONA addressed Hypotheses 2 (internal consistency of the IIQ-MH domains) and Hypotheses 3 (convergent validity through correlations of IIQ-MH domains). Data from GTCC and SONA addressed Hypotheses 4 (discriminant validity through correlations of the IIQ-MH domains with a measure of internalized stigma). Finally, data from SONA addressed Hypotheses 5 (criterion validity through correlations of the IIQ-MH domains with a measure of depression, anxiety, and stress).

### Demographics

Demographic information is presented in Table B2. Following exclusions, the analytic sample for the subsequent confirmatory factor analysis (i.e., participants from UNCG Mass Screening and GTCC) included 1,137 respondents between 16 and 63 years ( $M = 21.28$ ,  $SD = 6.04$ ) predominantly female (74.58% Female), and racially and ethnically diverse – with White (43.10%), Black or African American (37.82%), and Latinx or Hispanic (15.30%) representing the three largest racial/ethnic identity groups. GTCC and Mass Screening significantly differed in terms of age,  $t(702) = 10.284$ ,  $p < .001$ , and gender,  $(\chi^2(2) = 28.051, p < 0.001)$ . While the three largest racial/ethnic identity groups are the same for both samples (i.e., White (44.65%;41.68%), Black (37.27%; 38.32%), Latinx or Hispanic (14.94%;15.63%), for GTCC and Mass Screening respectively) their distribution is not identical. It is important to note that there are no current theoretical reasons for assuming that individuals would differ on illness identity factors based on

age, gender, and race/ethnicity, and, previous studies have found mixed findings on whether illness identity is associated with age and gender (Oris et al., 2016; Rassart et al., 2022).

### **Hypothesis 1: Confirmatory Factory Analysis**

Hypothesis 1 predicted that confirmatory factor analysis (CFA) of the IIQ-MH would yield an acceptable four-factor solution loading on to four latent factors: engulfment, rejection, acceptance, and enrichment. In order to test the first hypothesis, confirmatory factor analyses were conducted in Mplus 8.8. Model fit was evaluated in the CFA sample ( $N = 1137$ ) using the following fit indices: comparative fit index (CFI) value close to or greater than .90 (Fan et al., 1999), standardized root square mean residual (SRMR) value less than .08 (Hu & Bentler, 1999), and a RMSEA value with a 90% confidence interval that does not include values greater than .10 (MacCallum et al., 1996). Overall, the minimum requirement was that at least two of the three fit indices meet the criteria for acceptable model fit for the model to be accepted (Atkin et al., 2022). As indicated in Table B3, a four-factor model resulted in a CFI value just made the cut off of .90 at .896. The fit indices indicated acceptable fit to the data with an SRMR of .068 and an RMSEA value of .061 (90% CI: .058 to .065). However, as shown in Table B4, one item (item 6, “my mental health concerns simply belong to me as a person,”) did not meet the .40 cutoff value to be retained within the scale, and as such was subsequently dropped from the model. Model indices improved slightly upon running a CFA model without item 6 (CFI = .903; SRMR = .066; RMSEA = .062 [.058, .065]).

Additionally, modification indices provided by Mplus suggested that error correlations between related items within a single latent factor be added to the model (items 17 – 18). This specific error correlation with similarly worded items (i.e., “My mental health concerns prevents me from doing what I would really like to do” and “My mental health concerns limits me in

many things that are important to me” ) was also included in several prior studies examining the factor structure of the IIQ (Luyckx et al., 2018; Oris et al., 2018; Rassart et al., 2022). Model fit again improved slightly when a CFA was conducted accounting for this error correlation between items 17 and 18 (CFI = .915; SRMR = .066; RMSEA = .058 [.054, .061]) and this model subsequently used for all further analyses. Further, once accounting for one dropped item (i.e., item 6) and error correlations (i.e., items 17 – 18), this four-factor model had a slightly better fit than all six alternative three-factor models (in which any pair of factors were combined into a single factor) shown in Table B3, testifying to the distinctiveness of the four illness identity factors.

## **Hypothesis 2: Internal Consistency Reliability and Temporal Stability**

Internal consistency statistics of the IIQ-MH subscales were calculated (Hypothesis 2). Cronbach’s alphas for the IIQ-MH factor scores were calculated as a measure of internal consistency. McDonald’s hierarchical omegas were also calculated as a more conservative and robust measure of internal consistency (Dunn et al., 2014). As shown in Table B5, Cronbach  $\alpha$  values were .76 for rejection, .65 for acceptance, .90 for engulfment, and .87 for enrichment. Internal consistency calculated using McDonald’s omega were similar to alpha across all domains. As shown in Table B5, McDonald’s  $\omega$  values were .80 for rejection, .67 for acceptance, .92 for engulfment, and .89 for enrichment. Overall, acceptance had the lowest reliability estimates ( $\alpha = .65$ , and  $\omega = .67$ ), and engulfment had the highest reliability estimates ( $\alpha = .90$ , and  $\omega = .92$ ). Notably, all four subscales had alpha values greater than  $\alpha = .60$ , which is used as the cut point at which internal consistency is considered acceptable in measurement development (Nunnally, 1978). Taken together, the internal consistency reliability of the IIQ-MH subscales ranged from acceptable to excellent.

Following calculations of internal consistency statistics, mean scores and standard deviations of each subscale of the IIQ-MH were calculated for each participant group and used in subsequent analyses (Table B6). For those participants who completed the IIQ-MH during the SONA mass screening and during the study follow-up, test-retest reliability was calculated by evaluating intra class correlation coefficients (Weir, 2005) to assess the degree to which the participants' performance on the IIQ-MH is repeatable. Participants within the UNCG sample ( $n = 212$ ) completed the IIQ-MH for a second time after an average of 33.68 days ( $SD = 45.02$  days), with a range of 2 to 387 days. This range included time beyond a one-semester time frame, because participants were able to take mass screening once each semester and their earliest administration was kept within the useable sample for their time 1 data. Only four participants exceeded 100 days between test administrations (i.e., outside of the same semester) and were subsequently retained within the useable sample to calculate intra-class correlation coefficients. Test-retest reliability was found to be moderate for rejection ( $ICC = .67, p < .001, 95\%CI [.58, .75]$ ), acceptance ( $ICC = .53, p < .001, 95\%CI [.43, .62]$ ), engulfment ( $ICC = .72, p < .001, 95\%CI [.66, .78]$ ), and enrichment ( $ICC = .67, p < .001, 95\%CI [.57, .74]$ ). Taken together, the IIQ-MH subscales demonstrated adequate temporal stability over the average six-and-a-half-week test-retest interval.

### **Bivariate Correlations**

Participants from GTCC and UNCG SONA were included in the subsequent correlations. Demographic information of each sample is presented in Table B2. The analytic sample for the following bivariate correlations (i.e., participants from GTCC and SONA) included 754 respondents between 18 and 63 years ( $M = 22.23, SD = 6.96$ ) predominantly female (70.4% Female), and racially and ethnically diverse – with White (44.73%), Black or African American

(37.32%), and Latinx or Hispanic (15.08%) representing the three largest racial/ethnic identity groups. These two groups significantly differed in terms of age,  $t(722) = -8.14, p < .001$ , and gender, ( $X^2(2) = 24.26, p < .001$ ). Notably, participants from GTCC and SONA did not differ significantly on any of the IIQ-MH subscales (see Table B7 for a complete list of differences between the SONA and GTCC samples). Bivariate correlations were tested to examine the relationships between variables.

### **Hypothesis 3: Convergent Validity**

Hypothesis 3 predicted that the 4 IIQ-MH subscales would correlate significantly with variables that are theoretically similar to the construct being measured (Groth-Marnat & Wright, 2016). Pearson's correlations between domains of the IIQ-MH and self-esteem were evaluated to establish convergent validity of the IIQ-MH (Table B8). Results supported this hypothesis for three out of the four domains of the IIQ-MH, namely engulfment, rejection, and enrichment, at the  $p < .05$  level. Results indicated a large effect was found between engulfment and self-esteem,  $r(732) = -.51, p < .001$ , and small effects between enrichment,  $r(732) = .26, p < .001$ , and rejection,  $r(732) = -.15, p < .001$ . Surprisingly, acceptance and self-esteem were not significantly related ( $p = .92$ ) in the current sample.

Again, self-esteem was significantly different between both samples, with GTCC participants endorsing slightly higher levels of self-esteem (Table B7). In order to test for the possible impact of group differences between the two recruitment groups on the relationship between the IIQ-MH and self-esteem, a multiple linear regression was run with self-esteem regressed on engulfment and enrichment, with recruitment group included as a covariate. All predictor variables were centered at their grand mean prior to analysis. As shown in Table B9, results indicated that engulfment ( $\beta = -.52, p < .001$ ) and enrichment ( $\beta = .27, p < .001$ )

remained significant predictors of self-esteem after accounting for recruitment group.

Taken together, results partially supported the convergent validity of IIQ-MH through significant associations of a majority of the subscales of the IIQ-MH with a measure of self-esteem, with effect sizes ranging from small to large. Conversely, one subscale of the IIQ-MH, acceptance, did not significantly associate with self-esteem. As expected, enrichment had a positive relationship with self-esteem, although this effect was small, and engulfment had a negative relationship with self-esteem, and this effect was large. Possible reasons for this will be explored in the discussion section below.

#### **Hypothesis 4: Discriminant Validity**

In order to establish discriminant validity, Hypothesis 4 predicted that three IIQ-MH subscales would correlate weakly with a measure of internalized stigma, such that rejection would be positively correlated with internalized stigma, while acceptance and enrichment would be negatively correlated with internalized stigma. Pearson's correlations between domains of the IIQ-MH and internalized stigma were evaluated to establish discriminant validity of the IIQ-MH (Table B8). Results supported this hypothesis for three out of the four domains of the IIQ-MH, namely engulfment, rejection, and enrichment, at the  $p < .01$  level. Results indicated a large effect was found between engulfment and internalized stigma,  $r(742) = .54, p < .001$ , and small effects between enrichment,  $r(742) = -.21, p < .001$ , and rejection,  $r(742) = .24, p < .01$ . Surprisingly, acceptance and internalized stigma were not significantly related ( $p = .17$ ) in the current sample. Next, a multiple linear regression was conducted to examine the strength of the relationship of each of the IIQ-MH subscales in predicting internalized stigma (Table B9). When engulfment, rejection, and enrichment were all entered into the model as predictors, all three subscales remained significant in predicting internalized stigma: (enrichment:  $\beta = -.20, p < .001$ ;



engulfment:  $\beta = .53, p < .001$ ; rejection:  $\beta = .10, p < .001$ ). As there were no significant differences between recruitment groups on internalized stigma within the total sample (Table B7), group differences were not accounted for in subsequent multiple linear regression for Hypothesis 4.

Taken together, results partially supported the discriminant validity of IIQ-MH through weak associations with two subscales of the IIQ-MH (i.e., enrichment and rejection) with a measure of internalized stigma. One subscale of the IIQ-MH, acceptance, did not associate significantly with internalized stigma as predicted. As expected, rejection had a positive relationship with internalized stigma, and this effect was small, and enrichment had a negative relationship with internalized stigma, and this effect was also small. The relationship between engulfment and internalized stigma was theoretically unclear at the onset of these analyses and was explored here. Surprisingly, engulfment, had a correlation of large effect size with internalized stigma. Possible reasons for this will be explored in the discussion section below.

### **Hypothesis 5: Criterion Validity**

In order to establish criterion validity, Hypothesis 5 predicted that the four IIQ-MH subscales would correlate with a measure of depression, stress, and anxiety, such that rejection and engulfment would be positively correlated with negative feeling states of depression, stress, and anxiety, while acceptance and enrichment would be negatively correlated with negative feeling states of depression, stress, and anxiety. The DASS-21 was administered to participants from the UNCG SONA group only (see Table B1). Pearson's correlations between domains of the IIQ-MH and the DASS-21 were evaluated to establish criterion validity of the IIQ-MH (Table B8). As predicted, engulfment and rejection positively correlated with negatives feelings of depression, stress, and anxiety, at the  $p < .05$  level. Engulfment correlated the strongest with

feelings of depression,  $r(207) = .51, p < .001$ , followed by stress,  $r(209) = .41, p < .001$ , and feelings of anxiety,  $r(208) = .37, p < .001$ , whereas rejection correlated the strongest with feelings of depression,  $r(207) = .19, p = .003$ , followed by feelings of anxiety,  $r(208) = .15, p = .02$ , and stress,  $r(209) = .14, p = .03$ .

On the other hand, correlations between acceptance and enrichment and the DASS-21 subscales were mixed. Surprisingly, higher levels of acceptance were associated with higher levels of feelings of anxiety,  $r(208) = .16, p = .01$ , and the relationships between acceptance, feelings of depression, and stress were not significant (acceptance-depression:  $r(207) = .11, p = .06$ ; acceptance-stress:  $r(209) = .08, p = .21$ ). As predicted, enrichment was negatively associated with feelings of depression and stress at  $p < .01$ , but not significantly associated with feelings of anxiety ( $p = .43$ ). Enrichment correlated the strongest with feelings of depression,  $r(207) = -.23, p = .001$ , followed by stress,  $r(211) = -.20, p = .003$ .

Next, a multiple linear regression was conducted to investigate the relationship between stress, anxiety, and depression with the independent variables of Engulfment, Rejection, Acceptance, and Enrichment (Table B10). The results indicate that Engulfment ( $\beta = 3.41, p < .001$ ) and Enrichment ( $\beta = -2.19, p = .004$ ) were significant predictors of stress. Engulfment ( $\beta = 2.86, p < .001$ ) and Acceptance ( $\beta = 1.73, p = .030$ ) were significant predictors of anxiety, and Engulfment ( $\beta = 4.43, p < .001$ ), Enrichment ( $\beta = -2.57, p < .001$ ), and Acceptance ( $\beta = 1.69, p = .029$ ) were significant predictors of depression.

Overall, main effects were significant for stress ( $\beta = 13.71, t(203), p < .001$ ), anxiety ( $\beta = 10.55, t(203), p < .001$ ), and depression ( $\beta = 11.00, t(203), p < .001$ ). The model accounted for 20% of the variance in stress (adjusted  $R^2 = 19.56$ ), 15% of the variance in anxiety (adjusted  $R^2 = 14.93$ ), and 30% of the variance in depression (adjusted  $R^2 = 29.77$ ). Taken together, results

partially supported the criterion validity of the IIQ-MH with correlations of measures of depression, stress, and anxiety. As expected, engulfment and rejection had positive relationships with all subscales of the DASS-21, with effect sizes ranging from small to large. Conversely, enrichment had a significant negative relationship with feelings of depression and stress, with each with small effect sizes, but did not have a significant relationship with feelings of anxiety. Additionally, acceptance had a surprising positive relationship with feelings of anxiety, with a small effect size, and did not have significant relationships with feelings of depression and stress. Possible reasons for this will be explored in the discussion section below.

## CHAPTER IV: DISCUSSION

Mental illness identity is a broad concept that encompasses how people incorporate mental health concerns into their self-concept; however, measurement of mental illness identity varies substantially, and there is no well-validated measure of mental illness identity. Often, mental illness identity is captured within the literature as whether a participant accepts or rejects their status of someone with mental health concerns through the use of one-item, yes/no questions such as “I identify as a depressed person,” (Postmes et al., 2013). In addition, given that mental health concerns are on a continuum of severity and may remain hidden and undiagnosed for many years, it may be important to examine the integration of this aspect of identity among those who do, and do not, have an established mental illness. Identification with a mental illness is complex and multi-faceted and requires further investigation using psychometrically sound measures designed to assess dimensions of illness identity integration and well-being. Previous studies have found good support for the use of the Illness Identity Questionnaire in populations with physical health conditions, therefore, this study aimed to evaluate a theoretically informed and comprehensive self-report measure of illness identity adapted for use in populations with mental health concerns, the IIQ-MH.

### **Summary of Findings**

#### ***Hypothesis 1: Confirmatory Factor Analysis***

The resulting confirmatory factor analysis tested the hypothesis that an adapted version of the Illness Identity Questionnaire, to be used with people with mental health concerns (IIQ-MH), would retain the same factor structure previously found when the IIQ was used in populations with physical health conditions. The IIQ was first validated among adolescents with type 1 diabetes (Oris et al., 2016) and subsequently was validated in populations with chronic physical

health populations (Ingersgaard et al., 2022; Luyckx et al., 2018; Oris et al., 2018; Rassart et al., 2022). These studies all supported a four-factor structure of the IIQ with high factorial discriminate validity (Meyer & Lamash, 2021).

The findings of the current study provide support for a four-factor structure comprising of the dimensions of engulfment, rejection, acceptance, and engulfment, as indicated by the favorable model fit indices observed in the IIQ-MH. However, this study's results diverged from previous research, as one item from the acceptance subscale did not demonstrate adequate loading onto the proposed four-factor structure. These findings suggest that this particular item may not be a valid indicator of the underlying construct being measured. Indeed, the item in question, (i.e., item number 6 – “My mental health concerns simply belong to me as a person”) may make more sense in people with physical health conditions in which a person claims a sense of ownership over a diseased or injured body part, more so than one might make a claim of ownership over mental health concerns. Thus, after consideration, this item was subsequently dropped from the final IIQ-MH. We observed that dropping this one item slightly improved the fit of the model and thus the item was removed from the overall measure for subsequent analyses. In line with previous studies of the IIQ (Ingersgaard et al., 2022; Luyckx et al., 2018; Oris et al., 2016, 2018; Rassart et al., 2022), the resulting CFA demonstrated that the IIQ-MH retained four factors of illness identity: engulfment, rejection, acceptance, and engulfment.

Correlations between the IIQ-MH subscales also indicated that each factor uniquely contributes to an overall understanding of mental illness identity. All factor correlations were below .80, which further points to the IIQ-MH's discriminant validity (Brown, 2015). The current study found that engulfment and rejection are positively correlated, which is in line with previous research, as these dimensions capture a lack of illness integration (Oris et al., 2016).

Enrichment and acceptance were both positively correlated, which also follows previous research that has found that these domains capture instances of having integrated an illness identity into one's sense of self (Oris et al., 2016). As expected, rejection was negatively correlated with both acceptance and enrichment, indicating that individuals who report higher levels of rejection are likely to report lower levels of acceptance and enrichment.

Surprisingly, in the current study, engulfment and acceptance were positively correlated. This finding deviates from findings in previous studies of the IIQ, which typically result in small to moderate negative correlations between engulfment and acceptance (Andonian et al., 2021; Ingersgaard et al., 2022; Luyckx et al., 2018; Oris et al., 2016, 2018; Rassart et al., 2022). Despite having mental health concerns, participants in the current sample continue to engage in everyday life activities as college students in a way that might not be found in populations with more severe mental health concerns or mental illness. Therefore, engulfment items within this specific population might not be necessarily indicating a level of impairment found in populations with more complex mental health concerns or mental illness. Additionally, Cronbach's alpha for the acceptance subscale has previously ranged from .70 to .89 (see Peters & Brown, 2022 and Rassart et al., 2022, respectively). The lower internal consistency of the acceptance subscale in the present study (Cronbach's  $\alpha = .65$ ) may have also affected this subscale's relationship with other variables in the current sample. While engulfment and acceptance were positively correlated, they continue to remain independent constructs, as evidenced by examining poor fit indices that resulted when a CFA model was run with acceptance items collapsed into engulfment items (Table B3). Further research may be needed with populations at different levels of impairment to truly test this explanation. Overall, these

findings provide insight into the complex relationships among the four illness identity constructs measured by the IIQ-MH.

### ***Hypothesis 2: Internal Consistency and Test-Retest Reliability***

Results largely supported Hypotheses 2 regarding internal consistency and test-retest reliabilities of the IIQ-MH. Internal consistency estimates ranged from acceptable to very good. Test-retest reliability estimates ranged from moderate to excellent over the average six-and-a-half-week interval between survey administrations, though replication is needed given the size of the sample completing the test-retest study ( $n = 212$ ). Overall, the IIQ-MH subscales appear to demonstrate internal consistency and test-retest reliability.

### ***Hypotheses 3 and 4: Concurrent Validity***

Results of this study partially support that the IIQ-MH demonstrates convergent validity, as most of its subscales were significantly associated with self-esteem, with effect sizes ranging from small to large, and correlations being low enough to demonstrate that these are related but separate constructs. As expected, the enrichment subscale had a positive relationship with self-esteem, and the effect size was small, while the engulfment subscale had a negative relationship with self-esteem, with a large effect size. Within the literature, mental illness identity has a mixed relationship with self-esteem, with some researchers linking endorsement of a mental illness identity with higher levels of self-esteem (e.g., Warner et al., 1989) and others finding a mental illness identity to be damaging to self-esteem (e.g., Yanos et al., 2010). Thus, while the results of the current study were expected, further research should continue to the relationship between illness identity and self-esteem.

Endorsing an illness identity can lead to more self-esteem in some people but lower self-esteem in others because of differences in how individuals perceive and cope with their illness.

Accepting an illness and incorporating it into their identity may help some people make sense of their experiences, cope with their symptoms, and feel a sense of control over their condition. This can lead to increased self-esteem as they feel empowered to manage their illness and maintain a positive sense of self. However, for others, endorsing an illness identity may lead to negative self-perceptions and feelings of shame, stigmatization, and loss of control (Corrigan & Rao, 2012). This may be particularly true for individuals with chronic or stigmatized illnesses who may face social exclusion, discrimination, and reduced opportunities. As a result, they may experience lower self-esteem, as their illness identity becomes associated with negative self-concept and reduced social status.

As the current sample overall endorsed relatively normal to high levels of self-esteem, the current study may not be an accurate representation of the relationship between mental illness identity states and self-esteem. Overall, the relationship between illness identity and self-esteem is complex and likely depends on various factors, such as the type of mental illness, severity of symptoms, cultural and social contexts, and personal characteristics of the individual, which are all outside of the scope of the present study.

The results indicated that there was a large positive relationship between engulfment and internalized stigma, a small negative relationship between enrichment and internalized stigma, and a small positive relationship between rejection and internalized stigma. Correlations between all domains of the IIQ-MH and internalized stigma were low enough to demonstrate that these are related but separate constructs. These findings support the hypothesis for three out of the four domains of the IIQ-MH, providing evidence for discriminant validity of the measure. Furthermore, a multiple linear regression was conducted to examine the strength of the relationship between each of the IIQ-MH subscales and internalized stigma. The results showed



that all three subscales, including engulfment, rejection, and enrichment, remained significant in predicting internalized stigma. However, it should be noted that the relationship between acceptance and internalized stigma was not significant, which suggests that there may be some overlap between these constructs. Individuals may still hold stigmatizing beliefs and attitudes towards mental illness despite accepting the importance of mental health concerns. Additionally, this relationship may be due to the lower internal consistency of acceptance in the current sample, which may have impacted the correlation between acceptance and internalized stigma. Therefore, further research is needed to explore the relationship between acceptance and internalized stigma and to better understand the discriminant validity of this particular subscale of the IIQ-MH.

#### ***Hypothesis 5: Criterion Validity***

The results provide some support for the hypothesis that the IIQ-MH's engulfment and rejection domains will be positively correlated with symptoms of depression, anxiety, and stress, and that the acceptance and enrichment domains will be negatively correlated with these symptoms. The findings of this study show that the correlations between engulfment and rejection with negative feelings of depression, stress, and anxiety were statistically significant and in the expected direction. Additionally, enrichment was negatively associated with feelings of depression and stress as predicted. However, the correlations between acceptance and feelings of anxiety were unexpected, with higher levels of acceptance being associated with higher levels of feelings of anxiety. Accepting mental health concerns may be correlated with more anxiety because it could be that those who accept their concerns, have a higher level of awareness of one's own mental health symptoms and difficulties, which in turn could cause worry and stress about the implications of those symptoms for one's well-being and functioning. Additionally,

endorsing mental health concerns and accepting a mental illness identity could lead to social stigma and discrimination, which could contribute to feelings of anxiety and distress (Cruwys & Gunaseelan, 2016). Finally, it is possible that individuals who are more prone to anxiety may also be more likely to endorse an illness identity, although this would need to be further investigated in future research. Therefore, while the current study's results partially support Hypothesis 5, the mixed results regarding acceptance suggest that further research is needed to establish criterion validity of the IIQ-MH's acceptance domain.

### **Study Limitations**

Despite the benefit of using a psychometrically sound measure such as the IIQ-MH to study mental illness identity, there are limitations to the current study that must be addressed. For one, identification with an illness is dynamic and emergent. One limitation of the current study is that while participants were provided a list of mental health concerns to select from to indicate their experience with current mental health symptoms, participant's concerns were dichotomized within the current sample to indicate the presence or absence of concerns to be included in the useable sample. In doing so, concerns such as attention problems were given the same weight as concerns such as seeing things that others do not see, which within the scope of mental illness, represents vastly different indications of severity of mental illness and concerns. Future studies should seek to evaluate whether the type of concern (i.e., internalizing, externalizing, developmental, psychotic), frequency of concerns, and severity of concerns may have an impact on the relationships with domains of mental illness identity and other variables (i.e., self-esteem, internalized stigma, attitudes towards seeking treatment). Additionally, it would be useful to investigate the additive properties of the IIQ-MH in predicting treatment seeking and treatment

outcomes above and beyond variables such as age, gender, socioeconomic status, and level of mental health related stigma.

Additionally, this study was cross-sectional by design, which does not allow us to draw conclusions on the directions of effects linking illness identities and other variables. Thus, all forms of validity established in this study are concurrent, which is weaker than establishing predictive validity. More specifically, it cannot be determined from the present study whether identification with mental health concerns is an antecedent or consequence of functioning and this relationship should be investigated in future longitudinal research. Similarly, given the extensive literature of mental health-related stigma and functioning, it is possible that results of this study are products of the relationship between internalized stigma and related variables, and future studies should seek to tease out the effects of internalized mental illness stigma on illness identity states and related variables. This study was also based on self-report questionnaires and other methods of data collection should be considered in future research, such as qualitative interviews to explore mental illness identity more in-depth with more nuance.

### **Implications and Future Directions**

Studying illness identity as it relates to mental illness opens the door to understanding how people incorporate mental health concerns into their self-concept, in a similar way that is currently emerging in populations with physical health concerns (Rassart et al., 2022). In populations with physical health conditions, illness identity has been found to be related to psychological and physical functioning, healthcare utilization, and absence at work or school (Van Bulck et al., 2021) and as such it is worth investigating whether the same may hold true for populations with mental health conditions. The present study involved the adaptation and initial evaluation of the Illness Identity Questionnaire for people with mental health concerns, as the

Illness Identity Questionnaire-Mental Health. As this was the first study to examine the IIQ-MH, future studies should address whether mental illness identity states (namely, acceptance, rejection, engulfment, and enrichment) lend any additional information above and beyond symptoms of mental health conditions and diagnoses in predicting functioning and treatment outcomes.

While the current study assessed the temporal stability of the IIQ-MH over a month and a half test-retest period, this time frame does not lend insight into how people experience different illness identity states over time. The current study was unable to address how mental illness identity emerges and changes developmentally, across time. The current study consisted of students from higher level academic institutions who endorsed experiencing current mental health concerns, and as such, does not capture how mental illness identity relates to the severity of their mental health concerns, the length of time lived with their mental health concerns, whether they would be willing to or are currently seeking treatment for mental health concerns, or the centrality of their mental health concerns in general. Participants were generally in their early twenties across all samples of the current study, which is a developmentally critical time in one's life for making sense of one's identity. The sensitive nature of this developmental time period and how it relates to identification with mental health concerns should be explored in future studies.

Future studies evaluating the IIQ-MH should also seek to recruit samples with diverse populations, specifically through recruitment of participants who are not enrolled in a postsecondary academic institution, to represent various levels of functioning associated with mental health conditions. Additionally, administration of the IIQ-MH should also be validated in populations with specific mental illness diagnoses and symptoms and further refined for use in

such samples. The retained version of the IIQ-MH in the present study included 24-items, and a shorter version of the IIQ-MH may be desirable for use in clinical contexts. As such, future efforts may include developing a shorter version of the IIQ-MH using item response theory and principal component analyses.

Additionally, the current study did not evaluate the process by which people identify as a group member of people with mental health conditions or mental health-related diagnoses. Previous research has hypothesized that engulfment involves the attribution of a sick or patient role to oneself, which progressively becomes the individuals' central identity (Gelencser et al., 2022) and future studies should include measures for identity centrality to assess whether the engulfment subscale of the IIQ-MH is sufficient to understand how central one's mental health concerns become to their identity, and if so, whether the engulfment subscale of the IIQ-MH is sensitive to changes in illness identity centrality over time. Future research should also seek to include measures of collective self-esteem and group membership to assess for whether a person truly integrates a mental illness identity into their social identity, and to assess how illness identity states affect their social relationships and social functioning, given that previous research has found that distancing oneself from negative stereotypes regarding mental illness is associated with higher self-esteem and fewer mental health related symptoms (Marcussen et al., 2021).

Overall, the IIQ-MH holds promise as a comprehensive measure of illness identity as it relates to mental illness and has the potential to advance our understanding of mental illness identity and its relationship with other constructs, including treatment outcomes and overall functioning.

## REFERENCES

- Adams, S., Pill, R., & Jones, A. (1997). Medication, chronic illness and identity: The perspective of people with asthma. *Social Science & Medicine*, *45*(2), 189–201.  
[https://doi.org/10.1016/S0277-9536\(96\)00333-4](https://doi.org/10.1016/S0277-9536(96)00333-4)
- Andonian, C., Freilinger, S., Kaemmerer, H., & Beckmann, J. (2021). Psychological well-being in adults with congenital heart disease: Testing the predictive value of illness identity. *Heart and Mind*, *5*(2), 45. [https://doi.org/10.4103/hm.hm\\_32\\_21](https://doi.org/10.4103/hm.hm_32_21)
- Antony, M. M., Bieling, P. J., Cox, B. J., Enns, M. W., & Swinson, R. P. (1998). Psychometric properties of the 42-item and 21-item versions of the Depression Anxiety Stress Scales in clinical groups and a community sample. *Psychological Assessment*, *10*(2), 176–181.  
<https://doi.org/10.1037/1040-3590.10.2.176>
- Atkin, A. L., Christophe, N. K., Yoo, H. C., Gabriel, A. K., Wu, C. S., & The LOVING Study Collaborative. (2022). The Development and Validation of the Familial Support of Multiracial Experiences Scale. *The Counseling Psychologist*, *50*(1), 40–66.  
<https://doi.org/10.1177/00110000211046354>
- Barker, K. (2002). Self-Help Literature and the Making of an Illness Identity: The Case of Fibromyalgia Syndrome (FMS). *Social Problems*, *49*(3), 279–300.  
<https://doi.org/10.1525/sp.2002.49.3.279>
- Berntsen, D., & Rubin, D. C. (2006). The centrality of event scale: A measure of integrating a trauma into one's identity and its relation to post-traumatic stress disorder symptoms. *Behaviour Research and Therapy*, *44*(2), 219–231.  
<https://doi.org/10.1016/j.brat.2005.01.009>

- Boateng, G. O., Neilands, T. B., Frongillo, E. A., Melgar-Quiñonez, H. R., & Young, S. L. (2018). Best practices for developing and validating scales for health, social, and behavioral research: A Primer. *Frontiers in Public Health, 6*, 149. <https://doi.org/10.3389/fpubh.2018.00149>
- Boyd, J. E., Otilingam, P. G., & DeForge, B. R. (2014). Brief version of the Internalized Stigma of Mental Illness (ISMI) scale: Psychometric properties and relationship to depression, self esteem, recovery orientation, empowerment, and perceived devaluation and discrimination. *Psychiatric Rehabilitation Journal, 37*(1), 17–23. <https://doi.org/10.1037/prj0000035>
- Brown, T. A. (2015). *Confirmatory factor analysis for applied research* (Second edition). The Guilford Press.
- Charmaz, K. (1995). The Body, Identity, and Self: Adapting to Impairment. *The Sociological Quarterly, 36*(4), 657–680.
- Clement, S., Schauman, O., Graham, T., Maggioni, F., Evans-Lacko, S., Bezborodovs, N., Morgan, C., Rüsch, N., Brown, J. S. L., & Thornicroft, G. (2015). What is the impact of mental health-related stigma on help-seeking? A systematic review of quantitative and qualitative studies. *Psychological Medicine, 45*(1), 11–27. <https://doi-org.libproxy.uncg.edu/10.1017/S0033291714000129>
- Corrigan, P. W., Morris, S., Larson, J., Rafacz, J., Wassel, A., Michaels, P., Wilkniss, S., Batia, K., & Rüsch, N. (2010). Self-stigma and coming out about one's mental illness. *Journal of Community Psychology, 38*(3), 259–275. <https://doi.org/10.1002/jcop.20363>

- Corrigan, P. W., & Rao, D. (2012). On the Self-Stigma of Mental Illness: Stages, Disclosure, and Strategies for Change. *Canadian Journal of Psychiatry. Revue Canadienne de Psychiatrie*, 57(8), 464–469.
- Cruwys, T., & Gunaseelan, S. (2016). “Depression is who I am”: Mental illness identity, stigma and wellbeing. *Journal of Affective Disorders*, 189, 36–42.  
<https://doi.org/10.1016/j.jad.2015.09.012>
- Cruwys, T., Haslam, S. A., Dingle, G. A., Haslam, C., & Jetten, J. (2014). Depression and Social Identity: An Integrative Review. *Personality and Social Psychology Review*, 18(3), 215–238. <https://doi.org/10.1177/1088868314523839>
- DeVellis, R. F., & Thorpe, C. T. (2022). *Scale development: Theory and applications* (Fifth edition). SAGE Publications, Inc.
- Dubreucq, J., Plasse, J., & Franck, N. (2021). Self-stigma in serious mental illness: A systematic review of frequency, correlates, and consequences. *Schizophrenia Bulletin*, 47(5), 1261–1287. <https://doi.org/10.1093/schbul/sbaa181>
- Dunn, T. J., Baguley, T., & Brunsdon, V. (2014). From alpha to omega: A practical solution to the pervasive problem of internal consistency estimation. *British Journal of Psychology*, 105(3), 399–412. <https://doi.org/10.1111/bjop.12046>
- Enders, C. K., & Bandalos, D. L. (2001). The relative performance of Full Information Maximum Likelihood Estimation for missing data in structural equation models. *Structural Equation Modeling: A Multidisciplinary Journal*, 8(3), 430–457.  
[https://doi.org/10.1207/S15328007SEM0803\\_5](https://doi.org/10.1207/S15328007SEM0803_5)
- Estroff, S. E., Lachicotte, W. S., Illingworth, L. C., & Johnston, A. (1991). Everybody’s got a little mental illness: Accounts of illness and self among people with severe, persistent



- mental illnesses. *Medical Anthropology Quarterly*, 5(4), 331–369.  
<https://doi.org/10.1525/maq.1991.5.4.02a00030>
- Estroff, S. E., Penn, D. L., & Toporek, J. R. (2004). From stigma to discrimination: An analysis of community efforts to reduce the negative consequences of having a psychiatric disorder and label. *Schizophrenia Bulletin*, 30(3), 493–509.  
<https://doi.org/10.1093/oxfordjournals.schbul.a007097>
- Fan, X., Thompson, B., & Wang, L. (1999). Effects of sample size, estimation methods, and model specification on structural equation modeling fit indexes. *Structural Equation Modeling: A Multidisciplinary Journal*, 6(1), 56–83.  
<https://doi.org/10.1080/10705519909540119>
- Gehrt, T. B., Berntsen, D., Hoyle, R. H., & Rubin, D. C. (2018). Psychological and clinical correlates of the Centrality of Event Scale: A systematic review. *Clinical Psychology Review*, 65, 57–80. <https://doi.org/10.1016/j.cpr.2018.07.006>
- Gelencser, C. R., Sauv e, G., Konsztowicz, S., B elanger, C., & Lepage, M. (2022). The impact of mental illness on self-concept: Relationship between engulfment, cognitive insight, and depression in schizophrenia. *Psychosis*, 0(0), 1–12.  
<https://doi.org/10.1080/17522439.2022.2109717>
- Groth-Marnat, G., & Wright, A. J. (2016). *Handbook of Psychological Assessment* (Sixth edition). John Wiley & Sons.
- Guadagnoli, E., & Velicer, W. F. (1988). Relation of sample size to the stability of component patterns. *Psychological Bulletin*, 103(2), 265–275. <https://doi.org/10.1037/0033-2909.103.2.265>

- Haslam, S. A., Jetten, J., Postmes, T., & Haslam, C. (2009). Social identity, health and well-being: An emerging agenda for applied psychology. *Applied Psychology, 58*(1), 1–23. <https://doi.org/10.1111/j.1464-0597.2008.00379.x>
- Hayne, Y. M. (2003). Experiencing psychiatric diagnosis: Client perspectives on being named mentally ill\*. *Journal of Psychiatric and Mental Health Nursing, 10*(6), 722–729. <https://doi.org/10.1046/j.1365-2850.2003.00666.x>
- Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review, 94*(3), 319–340. <https://doi.org/10.1037/0033-295X.94.3.319>
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal, 6*(1), 1–55. <https://doi.org/10.1080/10705519909540118>
- Ingersgaard, M. V., Grabowski, D., & Olesen, K. (2022). Cultural adaptation and psychometric validation of the Danish Illness Identity Questionnaire (IIQ-DK) in adolescents and emerging adults with type 1 diabetes. *Heliyon, 8*(3), e09109. <https://doi.org/10.1016/j.heliyon.2022.e09109>
- Jetten, J., Haslam, S. A., Cruwys, T., & Branscombe, N. R. (2017). *Social Identity, Stigma, and Health* (B. Major, J. F. Dovidio, & B. G. Link, Eds.; Vol. 1). Oxford University Press. <https://doi.org/10.1093/oxfordhb/9780190243470.013.18>
- Kreindler, S. A., Dowd, D. A., Star, N. D., & Gottschalk, T. (2012). Silos and social identity: The social identity approach as a framework for understanding and overcoming divisions in health care. *The Milbank Quarterly, 90*(2), 347–374.

- Leavey, J. (2005). Youth experiences of living with mental health problems: Emergence, loss, adaptation and recovery (ELAR). *Canadian Journal of Community Mental Health, 24*(2), 109–126. SocINDEX with Full Text.
- Luyckx, K., Oris, L., Raymaekers, K., Rassart, J., Moons, P., Verdyck, L., Mijster, T., & Mark, R. E. (2018). Illness identity in young adults with refractory epilepsy. *Epilepsy & Behavior, 80*, 48–55. <https://doi.org/10.1016/j.yebeh.2017.12.036>
- MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological Methods, 1*, 130–149. <https://doi.org/10.1037/1082-989X.1.2.130>
- Mak, W. W. S., Poon, C. Y. M., Pun, L. Y. K., & Cheung, S. F. (2007). Meta-analysis of stigma and mental health. *Social Science & Medicine, 65*(2), 245–261. <https://doi.org/10.1016/j.socscimed.2007.03.015>
- Maniaci, M. R., & Rogge, R. D. (2014). Caring about carelessness: Participant inattention and its effects on research. *Journal of Research in Personality, 48*, 61–83. <https://doi.org/10.1016/j.jrp.2013.09.008>
- Marcussen, K., Gallagher, M., & Ritter, C. (2019). Mental illness as a stigmatized identity. *Society and Mental Health, 9*(2), 211–227. <https://doi.org/10.1177/2156869318810326>
- Marcussen, K., Gallagher, M., & Ritter, C. (2021). Stigma resistance and well-being in the context of the mental illness identity. *Journal of Health and Social Behavior, 62*(1), 19–36. <https://doi.org/10.1177/0022146520976624>
- McCay, E. A., & Seeman, M. V. (1998). A scale to measure the impact of a schizophrenic illness on an individual's self-concept. *Archives of Psychiatric Nursing, 12*(1), 41–49. [https://doi.org/10.1016/S0883-9417\(98\)80007-1](https://doi.org/10.1016/S0883-9417(98)80007-1)

- Meyer, S., & Lamash, L. (2021). Illness identity in adolescents with celiac disease. *Journal of Pediatric Gastroenterology & Nutrition*, 72(2), e42–e47.  
<https://doi.org/10.1097/MPG.0000000000002946>
- Morea, J. M., Friend, R., & Bennett, R. M. (2008). Conceptualizing and measuring illness self-concept: A comparison with self-esteem and optimism in predicting fibromyalgia adjustment. *Research in Nursing & Health*, 31(6), 563–575.  
<https://doi.org/10.1002/nur.20294>
- Norton, Peter J. (2007). Depression Anxiety and Stress Scales (DASS-21): Psychometric analysis across four racial groups. *Anxiety, Stress & Coping*, 20(3), 253–265.  
<https://doi.org/10.1080/10615800701309279>
- Nunnally, J. C. (1978). *Psychometric Theory* (2d ed). McGraw-Hill.
- O'Connor, C., Kadianaki, I., Maunder, K., & McNicholas, F. (2018). How does psychiatric diagnosis affect young people's self-concept and social identity? A systematic review and synthesis of the qualitative literature. *Social Science & Medicine*, 212, 94–119.  
<https://doi.org/10.1016/j.socscimed.2018.07.011>
- Oris, L., Luyckx, K., Rassart, J., Goubert, L., Goossens, E., Apers, S., Arat, S., Vandenberghe, J., Westhovens, R., & Moons, P. (2018). Illness Identity in Adults with a Chronic Illness. *Journal of Clinical Psychology in Medical Settings*, 25(4), 429–440.  
<https://doi.org/10.1007/s10880-018-9552-0>
- Oris, L., Rassart, J., Prikken, S., Verschueren, M., Goubert, L., Moons, P., Berg, C. A., Weets, I., & Luyckx, K. (2016). Illness Identity in Adolescents and Emerging Adults With Type 1 Diabetes: Introducing the Illness Identity Questionnaire. *Diabetes Care*, 39(5), 757–763.  
<https://doi.org/10.2337/dc15-2559>

- Peters, L. A., & Brown, E. M. (2022). The relationship between illness identity and the self-management of Inflammatory Bowel Disease. *British Journal of Health Psychology*.  
<https://doi.org/10.1111/bjhp.12584>
- Postmes, T., Haslam, S. A., & Jans, L. (2013). A single-item measure of social identification: Reliability, validity, and utility. *British Journal of Social Psychology*, *52*(4), 597–617.  
<https://doi.org/10.1111/bjso.12006>
- Rassart, J., Oris, L., Prikken, S., Goethals, E. R., Raymaekers, K., Weets, I., Moons, P., & Luyckx, K. (2021). Illness identity and adjusting to type I diabetes: A four-wave longitudinal study. *Health Psychology*, *40*(5), 326–336.  
<https://doi.org/10.1037/hea0001063>
- Rassart, J., Van Wanseele, C., Debrun, L., Matthijs, K., Moons, P., Van Bulck, L., Arat, S., Van Oudenhove, L., & Luyckx, K. (2022). Illness Identity in Inflammatory Bowel Disease. *International Journal of Behavioral Medicine*. <https://doi.org/10.1007/s12529-022-10072-y>
- Ritsher, J. B., & Phelan, J. C. (2004). Internalized stigma predicts erosion of morale among psychiatric outpatients. *Psychiatry Research*, *129*(3), 257–265.  
<https://doi.org/10.1016/j.psychres.2004.08.003>
- Schmitt, D. P., & Allik, J. (2005). Simultaneous administration of the Rosenberg Self-Esteem Scale in 53 nations: Exploring the universal and culture-specific features of Global Self-Esteem. *Journal of Personality and Social Psychology*, *89*(4), 623–642.  
<https://doi.org/10.1037/0022-3514.89.4.623>
- Schomerus, G., Auer, C., Rhode, D., Lupp, M., Freyberger, H. J., & Schmidt, S. (2012). Personal stigma, problem appraisal and perceived need for professional help in currently

- untreated depressed persons. *Journal of Affective Disorders*, 139(1), 94–97.  
<https://doi.org/10.1016/j.jad.2012.02.022>
- Schomerus, G., Stolzenburg, S., Freitag, S., Speerforck, S., Janowitz, D., Evans-Lacko, S., Muehlan, H., & Schmidt, S. (2019). Stigma as a barrier to recognizing personal mental illness and seeking help: A prospective study among untreated persons with mental illness. *European Archives of Psychiatry and Clinical Neuroscience*, 269(4), 469–479.  
<https://doi.org/10.1007/s00406-018-0896-0>
- Spears, R. (2011). Group Identities: The Social Identity Perspective. In S. J. Schwartz, K. Luyckx, & V. L. Vignoles (Eds.), *Handbook of Identity Theory and Research* (pp. 201–224). Springer. [https://doi.org/10.1007/978-1-4419-7988-9\\_9](https://doi.org/10.1007/978-1-4419-7988-9_9)
- St. Claire, L., Clift, A., & Dumbelton, L. (2008). How do I know what I feel? Evidence for the role of self-categorisation in symptom perceptions. *European Journal of Social Psychology*, 38(1), 173–186. <https://doi.org/10.1002/ejsp.417>
- Stolzenburg, S., Freitag, S., Evans-Lacko, S., Muehlan, H., Schmidt, S., & Schomerus, G. (2017). The stigma of mental illness as a barrier to self labeling as having a mental illness. *Journal of Nervous & Mental Disease*, 205(12), 903–909.  
<https://doi.org/10.1097/NMD.0000000000000756>
- Sulik, G. A. (2011). ‘Our Diagnoses, Our Selves’: The Rise of the Technoscientific Illness Identity. *Sociology Compass*, 5(6), 463–477. <https://doi.org/10.1111/j.1751-9020.2011.00374.x>
- Tajfel, H. (1974). Social identity and intergroup behaviour. *Social Science Information*, 13(2), 65–93. <https://doi.org/10.1177/053901847401300204>

- Tajfel, H., Billig, M. G., Bundy, R. P., & Flament, C. (1971). Social categorization and intergroup behaviour. *European Journal of Social Psychology, 1*(2), 149–178. <https://doi.org/10.1002/ejsp.2420010202>
- Tajfel, H., Jahoda, G., Nemeth, C., Rim, Y., & Johnson, N. B. (1972). The devaluation by children of their own national and ethnic group: Two case studies. *British Journal of Social and Clinical Psychology, 11*(3), 235–243. <https://doi.org/10.1111/j.2044-8260.1972.tb00808.x>
- Thoits, P. A. (2016). “I’m Not Mentally Ill”: Identity deflection as a form of stigma resistance. *Journal of Health and Social Behavior, 57*(2), 135–151.
- Turner, J. C., Brown, R. J., & Tajfel, H. (1979a). Social comparison and group interest in ingroup favouritism. *European Journal of Social Psychology, 9*(2), 187–204. <https://doi.org/10.1002/ejsp.2420090207>
- Turner, J. C., Brown, R. J., & Tajfel, H. (1979b). Social comparison and group interest in ingroup favouritism. *European Journal of Social Psychology, 9*(2), 187–204. <https://doi.org/10.1002/ejsp.2420090207>
- Turner, J. C., Hogg, M., Oakes, P., Reicher, S., & Wetherell, M. (1987). *Rediscovering the Social Group: A Self-Categorization Theory*. B. Blackwell.
- Van Bulck, L., Goossens, E., Apers, S., Moons, P., & Luyckx, K. (2021). Illness identity in adults with congenital heart disease: Longitudinal trajectories and associations with patient-reported outcomes and healthcare use. *Journal of Advanced Nursing, 77*(12), 4743–4754. <https://doi.org/10.1111/jan.14949>
- Vermeulen, M., Smits, D., Claes, L., Gandhi, A., Raes, F., & Krans, J. (2022). The Dutch 20 item Centrality of Event Scale: Factor structure, psychometric properties, and prospective

value. *European Journal of Psychological Assessment*. <https://doi.org/10.1027/1015-5759/a000704>

Vining, D., & Robinson, J. C. (2016). Concept analysis of illness engulfment in schizophrenia. *Archives of Psychiatric Nursing*, *30*(3), 370–374.

<https://doi.org/10.1016/j.apnu.2016.01.001>

Warner, R., Taylor, D., Powers, M., & Hyman, J. (1989). Acceptance of the mental illness label by psychotic patients. *American Journal of Orthopsychiatry*, *59*(3), 398–409.

<https://doi.org/10.1111/j.1939-0025.1989.tb01675.x>

Weir, J. P. (2005). Quantifying test-retest reliability using the intraclass correlation coefficient and the SEM. *The Journal of Strength and Conditioning Research*, *19*(1), 231.

<https://doi.org/10.1519/15184.1>

Yanos, P., Roe, D., & Lysaker, P. (2010). The impact of illness identity on recovery from severe mental illness. *American Journal of Psychiatric Rehabilitation*, *13*(2), 73–93.

<https://doi.org/10.1080/15487761003756860>

Yanos, P. T., DeLuca, J. S., Roe, D., & Lysaker, P. H. (2020). The impact of illness identity on recovery from severe mental illness: A review of the evidence. *Psychiatry Research*, *288*,

112950. <https://doi.org/10.1016/j.psychres.2020.112950>



## APPENDIX A: ILLNESS IDENTITY QUESTIONNAIRE – MENTAL HEALTH

### General Instructions

People may react in many different ways when they struggle with mental health concerns. *Mental health concerns* include things like stress, anxiety, depression, feeling overwhelmed, problems with alcohol or drug use, difficulties with memory or attention, or other problems with behavior, thoughts, or emotions. Please read each of the following statements carefully and rate the extent to which you agree that each one describes you.

Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
1	2	3	4	5

### Engulfment items

- 18. My mental health concerns limit me in many things that are important to me
- 17. My mental health concerns prevent me from doing what I would really like to do
- 15. My mental health concerns completely consume me
- 16. It seems as if everything I do, is influenced by my mental health concerns
- 14. My mental health concerns influence all my thoughts and feelings
- 11. My mental health concerns dominate my life
- 13. I am preoccupied with my mental health concerns
- 12. My mental health concerns have a strong impact on how I see myself

### Rejection items

- 5. I just avoid thinking about my mental health concerns
- 4. I never talk to others about my mental health concerns

3. I hate being talked to about my mental health concerns
2. I'd rather not think of my mental health concerns
1. I refuse to see my mental health concerns as part of myself

**Acceptance items**

6. My mental health concerns simply belong to me as a person<sup>a</sup>
7. My mental health concerns are part of who I am
9. I am able to place my mental health concerns in my life
8. I accept being a person with mental health concerns
10. I have learned to accept the limitations imposed by my mental health concerns

**Enrichment items**

23. Because of my mental health concerns, I have learned a lot about myself
20. Because of my mental health concerns, I know what I want out of life
21. Because of my mental health concerns, I have become a stronger person
22. Because of my mental health concerns, I realize what is really important in life
19. Because of my mental health concerns, I have grown as a person
25. Because of my mental health concerns, I have learned to enjoy the moment more
24. Because of my mental health concerns, I have learned to work through problems and not just give up

---

<sup>a</sup> Following analyses, item 6 was dropped from the final scale.

APPENDIX B: TABLES AND FIGURES

**Table B1. Summary of Participant Recruitment**

Admi- nistration	Survey <sup>a</sup>	Date	Sample <sup>b</sup>	Total Sample Size	Dropped Duplicates	Dropped Missing	Dropped Infrequency	Dropped No Current Concerns	Useable Sample Size
1	1	Spring 2022	GTCC	539	-	175	64	15	285 <sup>d</sup>
2	2	Spring 2022	UNCG Mass Screening	148	-	-	-	3	145 <sup>d</sup>
3	3	Spring 2022	UNCG SONA	63	-	8	8	1	46
4	2	Fall 2022	UNCG Mass Screening	268	9	1	-	11	247 <sup>d</sup>
5	3	Fall 2022	UNCG SONA	99	-	8	6	-	85
6	1	Spring 2023	GTCC	416	-	101	51	7	257 <sup>d</sup>
7	2	Spring 2023	UNCG Mass Screening	217	12	1	-	1	203 <sup>d</sup>
8	3	Spring 2023	UNCG SONA <sup>c</sup>	115	14	10	9	1	81
<b>Total</b>					<b>35</b>	<b>304</b>	<b>138</b>	<b>39</b>	
<b>Total for CFA</b>									<b>1,137</b>

<sup>a</sup> Survey 1: ARS-IS, MHHQ, IIQ-MH, ISMI, RSES. Survey 2: MMHQ, IIQ-MH. Survey 3: ARS-IS, MHHQ, IIQ-MH, ISMI, RSES, DASS.

<sup>b</sup> Sample: UNCG = University of North Carolina at Greensboro, GTCC = Guilford Technical Community College.

<sup>c</sup> Data collected through March 2, 2023 were included in analyses.

<sup>d</sup> Useable sample used to run a CFA for the IIQ-MH.

**Table B2. Demographic Characteristics of Usable Sample**

	GTCC	UNCG Mass Screening	UNCG SONA
<b>Gender Identity<sup>b</sup></b>			
Female	366 (67.53%)	482 (81.01%)	162 (76.40%)
Male	171 (31.55%)	109 (18.32%)	39 (18.40%)
Other	5 (0.92%)	4 (0.67%)	11 (5.20%)
Age (years), M (SD) <sup>b</sup>	23.19 (7.67)	19.55 (3.12)	19.80 (3.69)
Age Range (years)	18 – 63	16 – 52	18 – 52
<b>Race/Ethnicity<sup>a</sup></b>			
American Indian or Alaska Native	10 (1.85%)	10 (1.68%)	5 (2.40%)
Asian or Asian American	30 (5.54%)	59 (9.92%)	20 (9.40%)
Black or African American	202 (37.27%)	228 (38.32%)	78 (36.80%)
Native Hawaiian or Other Pacific Islander	6 (1.11%)	1 (0.17%)	-
Middle Eastern, Arab, or North African	10 (1.85%)	8 (1.34%)	3 (1.40%)
White/Caucasian	242 (44.65%)	248 (41.68%)	96 (45.30%)
Other Race	7 (1.29%)	14 (2.35%)	3 (1.40%)
Latinx, Latino, Latina, or Hispanic	81 (14.94%)	93 (15.63%)	32 (15.1%)

<sup>a</sup> Participants were allowed to select more than one racial/ethnic groups, as such, totals do not add up to 100 percent.

<sup>b</sup> Participants in the GTCC sample and Mass Screening Sample differed significantly on Age and Gender.

**Table B3. Illness Identity Questionnaire – Mental Health Model Fit Indices**

<b>Model</b>	<b>RMSEA [90% CI]</b>	<b>CFI</b>	<b>SRMR</b>
Four-factor	.061 [.058, .065]	.896	.068
Four-factor with item 6 removed	.062 [.058, .065]	.903	.066
Four-factor with item 6 removed and error correlations between items 17—18	.058 [.054, .061]	.915	.066
3-factor, rejection items collapsed into acceptance <sup>a</sup>	.083 [.080, .086]	.822	.108
3-factor, rejection items collapsed into enrichment <sup>a</sup>	.090 [.086, .093]	.792	.095
3-factor, rejection items collapsed into engulfment <sup>ab</sup>	-	-	-
3-factor, acceptance items collapsed into enrichment <sup>a</sup>	.071 [.068, .075]	.868	.083
3-factor, acceptance items collapsed into engulfment <sup>a</sup>	.084 [.080, .087]	.820	.115
3-factor, enrichment collapsed into engulfment <sup>a</sup>	.128 [.125, .131]	.578	.166

*Note.* RMSEA = root-mean square of approximation; CFI = comparative fit index; SRMR = standardized root-mean-square residual.

<sup>a</sup> Item 6 was removed from the model prior to running a CFA.

<sup>b</sup> Number of iterations was exceeded, and no convergence was found. CFA model was unable to run.

**Table B4. Illness Identity Questionnaire – Mental Health Item Descriptions and Standardized Factor Loadings**

Item	Factor				<i>M</i>	<i>SD</i>
	1	2	3	4		
<b>Engulfment items</b>						
18. My mental health concerns limit me in many things that are important to me	.736	-	-	-	2.720	1.192
17. My mental health concerns prevent me from doing what I would really like to do	.723	-	-	-	2.724	1.213
15. My mental health concerns completely consume me	.769	-	-	-	2.269	1.097
16. It seems as if everything I do, is influenced by my mental health concerns	.761	-	-	-	2.607	1.126
14. My mental health concerns influence all my thoughts and feelings	.676	-	-	-	2.958	1.169
11. My mental health concerns dominate my life	.766	-	-	-	2.396	1.121
13. I am preoccupied with my mental health concerns	.707	-	-	-	2.543	1.047
12. My mental health concerns have a strong impact on how I see myself	.648	-	-	-	3.444	1.170
<b>Rejection items</b>						
5. I just avoid thinking about my mental health concerns	-	.754	-	-	2.684	1.129
4. I never talk to others about my mental health concerns	-	.538	-	-	2.713	1.197
3. I hate being talked to about my mental health concerns	-	.603	-	-	2.713	1.123
2. I'd rather not think of my mental health concerns	-	.744	-	-	2.958	1.167

1. I refuse to see my mental health concerns as part of myself	-	.462	-	-	2.422	1.045
<b>Acceptance items</b>						
6. My mental health concerns simply belong to me as a person	-	-	.299	-	3.333	.979
7. My mental health concerns are part of who I am	-	-	.595	-	3.431	1.063
9. I am able to place my mental health concerns in my life	-	-	.563	-	3.412	.847
8. I accept being a person with mental health concerns	-	-	.679	-	3.619	1.012
10. I have learned to accept the limitations imposed by my mental health concerns	-	-	.441	-	3.057	1.057
<b>Enrichment items</b>						
23. Because of my mental health concerns, I have learned a lot about myself	-	-	-	.734	3.860	.942
20. Because of my mental health concerns, I know what I want out of life	-	-	-	.586	3.240	1.099
21. Because of my mental health concerns, I have become a stronger person	-	-	-	.791	3.691	1.024
22. Because of my mental health concerns, I realize what is really important in life	-	-	-	.729	3.581	.979
19. Because of my mental health concerns, I have grown as a person	-	-	-	.763	3.734	.949
25. Because of my mental health concerns, I have learned to enjoy the moment more	-	-	-	.616	3.520	1.043

24. Because of my mental health concerns, I have learned to work through problems and not just give up	-	-	-	.710	3.779	.982
--	---	---	---	------	-------	------

*Note.* All factor loadings are significant at  $p < .001$ .



**Table B5. Internal Consistency Reliability and Test-Retest Reliability of the IIQ-MH**

<b>Subscales of the IIQ-MH</b>	<i>N</i>	Internal Consistency ( $\alpha$ )	Internal Consistency ( $\omega$ )	<i>N</i>	Test-Retest Reliability (ICC)
Engulfment	1137	.90	.92	212	.72
Rejection	1137	.76	.80	212	.67
Acceptance	1137	.65	.67	212	.53
Enrichment	1137	.87	.89	212	.67

**Table B6. Means and Standard Deviations for Each Subscale of the IIQ-MH by Sample**

<b>Subscales of the IIQ-MH</b>	GTCC		UNCG Mass Screen		UNCG SONA	
	<i>N</i>	<i>M (SD)</i>	<i>N</i>	<i>M (SD)</i>	<i>N</i>	<i>M (SD)</i>
Engulfment	540	2.73 (.88)	595	2.69 (.87)	212	2.63 (.80)
Rejection	539	2.82 (.80)	595	2.62 (.79)	212	2.77 (.80)
Acceptance	539	3.29 (.72)	595	3.46 (.67)	212	3.38 (.67)
Enrichment	540	3.59 (.78)	595	3.67 (.74)	212	3.55 (.74)

*Note.* Item scores ranged from 1 to 5. Higher scores indicate higher levels of a subscale.

**Table B7. Differences between GTCC and SONA Samples on Key Variables**

Variable	GTCC			SONA			<i>df</i>	<i>t</i>	<i>p</i>	Cohen's <i>d</i>
	<i>n</i>	M	SD	<i>n</i>	M	SD				
Age	542	23.19	7.68	212	19.80	3.69	722	-8.14	<b>&lt;.001</b>	6.79
Engulfment	540	2.73	.88	212	2.63	.80	750	-.57	.085	.86
Rejection	539	2.82	.80	212	2.77	.80	749	-.74	.229	.80
Acceptance	539	3.29	.72	212	3.37	.67	749	1.49	.068	.70
Enrichment	540	3.59	.78	212	3.55	.74	750	-.57	.566	.77
ISMI	533	1.87	.46	211	1.81	.41	425	-1.93	<b>.027</b>	.44
RSES	523	28.36	4.63	211	27.49	5.80	413	-1.80	<b>.037</b>	6.09

*Note.* SONA is a subset of the entire UNCG Mass Screening population.

**Table B8. Means, standard deviations, and correlations**

Variable	<i>n</i>	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9
1. Age	754	22.23	6.96									
2. Engulfment	752	2.70	0.86	-.06								
3. Rejection	751	2.81	0.80	-.14**	.19**							
4. Acceptance	751	3.31	0.70	-.03	.31**	-.19**						
5. Enrichment	752	3.58	0.77	.03	.03	-.17**	.54**					
6. RSES	734	28.11	6.10	.21**	-.51**	-.15**	-.05	.26**				
7. ISMI	744	1.86	0.45	-.13**	.54**	.24**	.05	-.21**	-.53**			
8. Stress	211	13.74	8.95	.01	.41**	.14*	.08	-.20**	-.49**	.35**		
9. Anxiety	210	10.49	8.96	-.14*	.37**	.15*	.16*	-.08	-.48**	.27**	.66**	
10. Depression	209	10.91	9.63	-.00	.51**	.19**	.11	-.23**	-.66**	.44**	.70**	.64**

*Note.* *M* and *SD* are used to represent mean and standard deviation, respectively. ISMI = Internalized stigma of mental illness. RSES = Rosenberg's self-esteem scale. \* indicates  $p < .05$ . \*\* indicates  $p < .01$ .

**Table B9. Associations**

	RSES		ISMI	
	$\beta$	<i>p</i>	$\beta$	<i>p</i>
IIQ-MH Subscales				
Engulfment	-.52	<b>&lt;.001</b>	.53	<b>&lt;.001</b>
Rejection	.001	.997	.10	<b>&lt;.001</b>
Enrichment	.28	<b>&lt;.001</b>	-.20	<b>&lt;.001</b>
Recruitment Group	.09	<b>.005</b>	-	-
(1 = GTCC) added into the model				
IIQ-MH Subscales				
Engulfment	-.52	<b>&lt;.001</b>	-	-
Enrichment	.27	<b>&lt;.001</b>	-	-

*Note.*  $\beta$  = Standardized regression coefficients. Significant ( $p \leq .05$ ) associations

bolded.

**Table B10. Multiple Linear Regressions of the IIQ-MH and DASS-21**

IIQ-MH	Stress		Anxiety		Depression	
	$\beta$	$p$	$\beta$	$p$	$\beta$	$p$
Intercept	13.72	<b>&lt;.001</b>	10.55	<b>&lt;.001</b>	11.00	<b>&lt;.001</b>
Engulfment	3.41	<b>&lt;.001</b>	2.86	<b>&lt;.001</b>	4.43	<b>&lt;.001</b>
Rejection	.15	.808	.94	.144	.64	.306
Acceptance	1.25	.106	1.73	<b>.030</b>	1.69	<b>.029</b>
Enrichment	-2.19	<b>.004</b>	-1.08	.166	-2.57	<b>&lt;.001</b>

*Note.* The total sample for these regressions is 209 participants. Significant relationships where  $p < .05$  are bolded.

**Table B11. Frequencies of Current MH Concerns for GTCC and SONA Cumulatively**

<b>Current Mental Health Concern</b>	<b><i>N</i></b>	<b>Cumulative Percent</b>
Situational Worry or Stress	490	65.0
Anxiety	415	55.0
Easily distracted	385	51.1
Low energy	309	41.0
Low motivation	303	40.2
Forgetfulness	293	38.9
Easily frustrated	256	34.0
Loss of interest	241	32.0
Irritability	238	31.6
Avoiding people or places	235	31.2
Depression	218	28.9
Body image problems	216	28.6
Racing thoughts	214	28.4
Schoolwork problems	212	28.1
Concentration problems	208	27.6
Restlessness	190	25.2
Rapid mood swings	155	20.6
Panic Attacks	150	19.9
Decreased appetite	150	19.9
Weight gain	138	18.3
Guilt	134	17.8
Muscle tension	133	17.6
Flashbacks of traumatic events	131	17.4
Agitation	119	15.8
Talking too much	114	15.1
Intrusive or taboo thoughts	112	14.9
Persistent sadness	110	14.6
Feeling jumpy or easily startled	106	14.1
Crying spells	105	13.9
Anger control problems	96	12.7
Preoccupation or obsessions	93	12.3
Despondency or hopelessness	92	12.2
Job conflicts	81	10.7
Pain	81	10.7
Compulsions or ritual behaviors	79	10.5

<b>Current Mental Health Concern cont.</b>	<b><i>N</i></b>	<b>Cumulative Percent</b>
High energy	79	10.5
Increased appetite	76	10.1
Paranoia	70	9.3
Elevated mood or overly happy	68	9.0
Appetite change	66	8.8
Weight loss	64	8.5
Suicidal thoughts	56	7.4
Heightened suspicion	53	7.0
Impulsive sexual behaviors	46	6.1
Sensing the thoughts of others	45	6.0
Suicidal ideas	37	4.9
Physical symptoms	34	4.5
Alternative thoughts	30	4.0
Addictions	29	3.8
Feelings of being recorded	28	3.7
Sexual problems	27	3.6
Use of street drugs	24	3.2
Seeing spirits auras or other energy	23	3.1
Broadcasting thoughts to others	19	2.5
Overuse of alcohol	18	2.4
Hearing commands or commentary	17	2.3
Safety concerns	12	1.6
Thoughts of harming others	12	1.6
Anorexia	11	1.5
Purging	11	1.5
Abuse of prescribed medications	5	0.7
Gambling compulsively	2	0.3



**Figure B1. Attentive Responding Scale – Infrequency Subscale**

In general...

	Not at all TRUE	A little TRUE	Somewhat TRUE	Mostly TRUE	Very TRUE
I don't like getting speeding tickets.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It feels good to be appreciated.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'd rather be hated than loved.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoy the music of Marlene Sandersfield.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My favorite subject is agronomy.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't like being ridiculed or humiliated.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

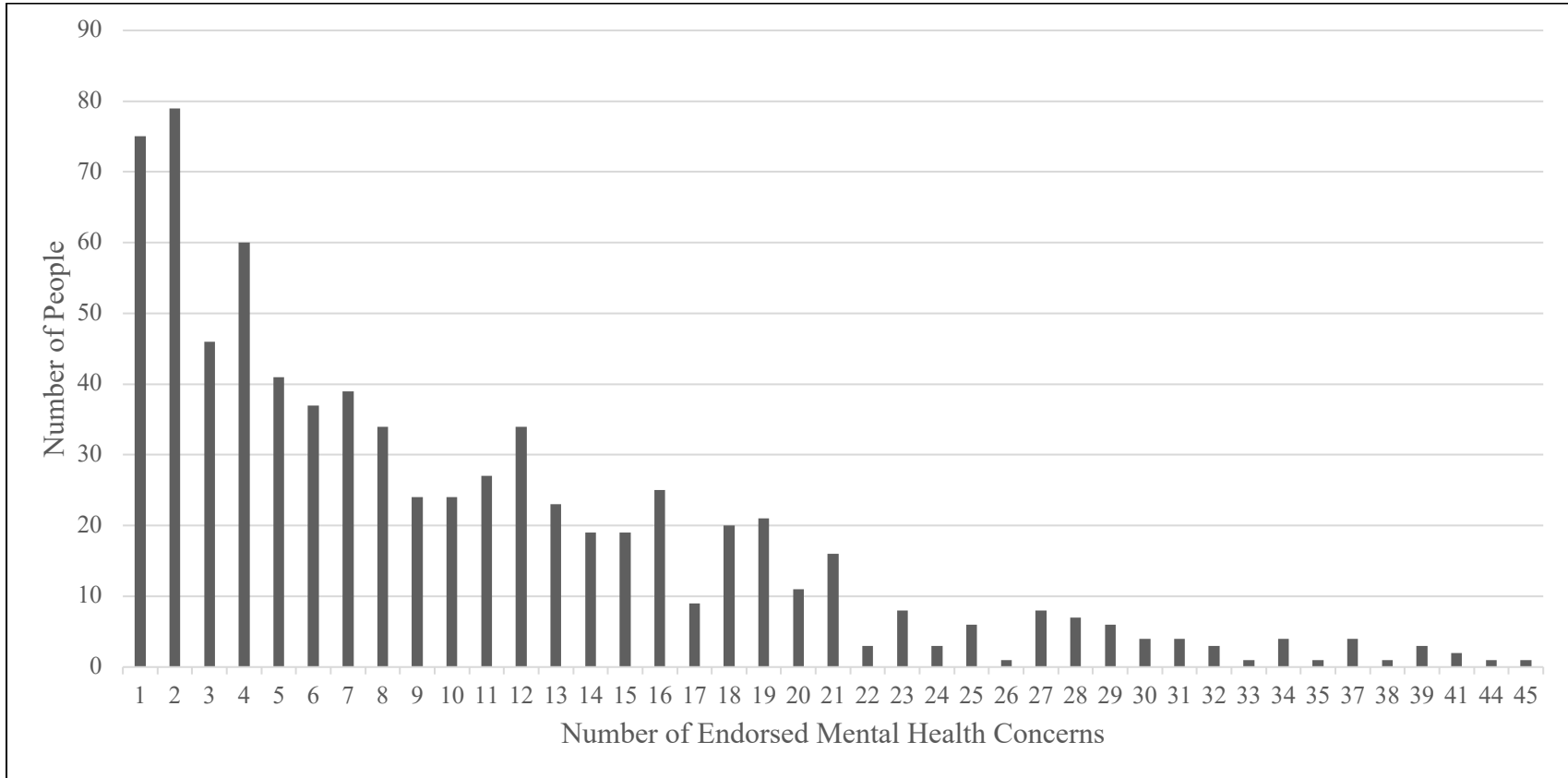
## Figure B2. Current Mental Health Concerns

What are your current emotional or mental-health concerns? Please select all that apply:

Anxiety  
Panic attacks  
Situational worry ("stress") preoccupation or obsessions compulsions or ritual behaviors  
intrusive or "taboo" thoughts avoiding people or places flashbacks of traumatic events feeling  
"jumpy" or easily startled depression  
Persistent sadness crying spells  
Despondency or hopelessness loss of interest  
Guilt  
Low energy low motivation  
Suicidal thoughts  
Concentration problems  
Forgetfulness easily distracted easily frustrated job conflicts  
Schoolwork problems  
Agitation  
Restlessness irritability  
Anger control problems racing thoughts  
Rapid mood swings high energy  
Elevated mood or overly happy talking too much alternative thoughts  
Hearing commands/commentary seeing spirits, auras, other energy heightened suspicion  
Paranoia  
Feelings of being recorded broadcasting thoughts to others sensing the thoughts of others  
Addictions  
Overuse of alcohol use of street drugs  
Abuse of prescribed medications impulsive sexual behaviors gambling compulsively  
Safety concerns  
Suicidal ideas  
Thoughts of harming others  
Appetite change  
Increased appetite weight gain decreased appetite weight loss anorexia  
Purging  
Body image problems  
Physical symptoms  
Pain  
Sexual problems  
Muscle tension (jaw, neck, etc.)

**Figure B3. Number of Endorsed MH Concerns**

73



## Figure B4. Rosenberg Self-Esteem Scale

Below is a list of statements dealing with your general feelings about yourself.

Please indicate how strongly you agree or disagree with each statement.

	Strongly Agree	Agree	Disagree	Strongly Disagree
On the whole, I am satisfied with myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
At times I think I am no good at all.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that I have a number of good qualities.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am able to do things as well as most other people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel I do not have much to be proud of.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I certainly feel useless at times.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that I'm a person of worth, at least on an equal plane with others.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I wish I could have more respect for myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
All in all, I am inclined to feel that I am a failure.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I take a positive attitude toward myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Figure B5. The Internalized Stigma of Mental Illness Inventory

We are going to use the term “mental illness” in the next set of questions, but please think of it as whatever you feel is the best term for it. For each question, please mark whether you 1-strongly disagree, 2-disagree, 3-agree, or 4-strongly agree.

	1 - Strongly Disagree	2 - Disagree	3 - Agree	4 - Strongly Agree
Mentally ill people tend to be violent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People with mental illness make important contributions to society.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I don't socialize as much as I used to because my mental illness might make me look or behave "weird."	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Having a mental illness has spoiled my life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I stay away from social situations in order to protect my family or friends from embarrassment.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People without mental illness could not possibly understand me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
People ignore me or take me less seriously just because I have a mental illness.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can't contribute anything to society because I have a mental illness.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can have a good, fulfilling life, despite my mental illness.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Others think that I can't achieve much in life because I have a mental illness.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Figure B6. The Depression Anxiety Stress Scales

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you **over the past week**. There are no right or wrong answers. Do not spend too much time on any statement.

The rating scale is as follows:

- 0 Did not apply to me at all
- 1 Applied to me to some degree, or some of the time
- 2 Applied to me to a considerable degree or a good part of time
- 3 Applied to me very much or most of the time

1 (s)	I found it hard to wind down	0	1	2	3
2 (a)	I was aware of dryness of my mouth	0	1	2	3
3 (d)	I couldn't seem to experience any positive feeling at all	0	1	2	3
4 (a)	I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion)	0	1	2	3
5 (d)	I found it difficult to work up the initiative to do things	0	1	2	3
6 (s)	I tended to over-react to situations	0	1	2	3
7 (a)	I experienced trembling (e.g. in the hands)	0	1	2	3
8 (s)	I felt that I was using a lot of nervous energy	0	1	2	3
9 (a)	I was worried about situations in which I might panic and make a fool of myself	0	1	2	3
10 (d)	I felt that I had nothing to look forward to	0	1	2	3
11 (s)	I found myself getting agitated	0	1	2	3
12 (s)	I found it difficult to relax	0	1	2	3
13 (d)	I felt down-hearted and blue	0	1	2	3
14 (s)	I was intolerant of anything that kept me from getting on with what I was doing	0	1	2	3
15 (a)	I felt I was close to panic	0	1	2	3
16 (d)	I was unable to become enthusiastic about anything	0	1	2	3
17 (d)	I felt I wasn't worth much as a person	0	1	2	3
18 (s)	I felt that I was rather touchy	0	1	2	3
19 (a)	I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat)	0	1	2	3
20 (a)	I felt scared without any good reason	0	1	2	3
21 (d)	I felt that life was meaningless	0	1	2	3