

Understanding Familiarity: Intimacy's Role in Public Stigma Towards Mental Illness

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Abstract

Background: The negative impact and barriers caused by mental health stigma are substantial, therefore understanding the context and underlying mechanisms that perpetuate stigma is crucial. Originally thought to be a linear relationship, Corrigan and Nieweglowski (2019) have proposed a U-shaped model to understand the effects of familiarity on stigma. However, research and empirical support for the suggested model is limited. Additionally, familiarity has predominantly been explored in terms of the type of relationship and overall closeness determined by relationship type. A potentially more accurate representation and understanding of the degree of familiarity could be examining the direct level of intimacy within an individual's relationship.

Objective: The present study aimed to explore whether the relationship between familiarity (in terms of intimacy) and public stigma is better fit by a linear model or a quadratic model.

Additionally, this study examined the impact of personal mental illness on the relationship between public and self-stigma. **Method:** Participants ($n = 523$) completed a demographic questionnaire and three public stigma measures. Individuals who identified knowing someone with mental illness were assessed on the degree of intimacy within that relationship. Participants that identified as having a mental illness themselves completed a self-stigma questionnaire.

Results: Across all three public stigma measures, a linear model better fit the relationship between intimacy and public stigma. The addition of a quadratic term did not significantly improve the fit. In the sub-group with lived experience ($n = 227$), similar results emerged. Exploratory analysis showed significant associations between public and self-stigma and intimacy was positively correlated with self-stigma. **Discussion:** Our findings did not support the quadratic model, but they did highlight the potential protective role intimacy may play in

reducing stigma. However, increased intimacy may heighten internalized stigma for those with lived experiences suggesting the need for more targeted stigma-related interventions.

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Understanding Familiarity: Intimacy's Role in Public Stigma Towards Mental Health

Stigma is a pervasive social phenomenon that occurs in many global contexts, including those such as race, sexual orientation, and physical illness (Major & O'Brien, 2005). The work of Goffman (1963) is foundational to stigma research, including his book *Stigma: Notes on the Management of a Spoiled Identity*. He described stigma as a set of beliefs that evokes prejudice and discrimination as it reduces someone “from a whole and usual person to a tainted, discounted one” (Goffman, 1963, p. 3). This definition has widespread applicability and is not isolated to one specific group or condition. Mental health stigma is one of these experiences that has become a global scale problem.

In 2022, more than 5 million Canadians experienced significant mental illness symptoms (Stephenson, 2023), which can severely impact an individual's functioning. For instance, someone with bipolar disorder may struggle to retain employment due to symptoms during manic, hypomanic, and depressive episodes. This can result in cognitive impairments like difficulties with attention and memory along with potential physical impairments such as the inability to get out of bed. The effects of retaining employment can then lead to the inability to afford sufficient and healthy food, which in turn increases health risks for conditions such as diabetes (Canadian Mental Health Association, n.d.). In addition to the effects of mental health symptoms, those with mental illness are also faced with stigma from the community. Stigma poses additional challenges and barriers that can lead to social isolation and exclusion from society (Corrigan & Rao, 2012). Furthermore, stigma related to mental health leads to hesitancy in help-seeking, increased mental illness symptomology, and reduced effectiveness in treatments (American Psychological Association, 2020). Overall, stigma further exacerbates the negative

impacts of mental illness and increases limitations that can reduce people's abilities to cope and function effectively.

Stigma has been explored through four primary models or frameworks: sociocultural perspectives, motivational biases, evolutionary origins, and social cognitive theories (Corrigan, 2000; Kurzban & Leary, 2001). This paper uses a social cognitive theory to examine mental health stigma, specifically the relationship of stereotypes, prejudice, and discrimination (Corrigan & Watson, 2002b). In this model, stigma starts developing when an individual accepts a set of negative stereotypes about a group. This creates a negative emotional reaction, or a prejudice, towards that group. Prejudice then leads to the behavioural reaction of discrimination that can show in various ways including hostility, rejection, and avoidance (Corrigan & Watson, 2002b). Within this framework, mental health stigma can be separated into public stigma and self-stigma (Corrigan & Watson, 2002a). Other types of stigmas have been suggested in the literature and do exist, but only public and self-stigma will be the focus of this research.

Public Stigma

According to social-cognitive models, public stigma evolves within society through the acceptance of stereotypes. Many stereotypes exist about those with mental illness; for example, they are labelled as violent, unpredictable, and unable to make decisions independently (Ontario Human Rights Commission, 2012). If we use the stereotype that individuals with mental health issues are more violent, an individual must first agree with this statement for public stigma to continue to develop (Corrigan & Watson, 2002a). If someone became on edge and felt unsafe when they were around an individual with mental illness, that would be an adverse emotional reaction toward the individual or a prejudice. If that individual actively avoided the person with

mental illness, despite not having any interaction with them but due to their emotional reaction of fear, this would be a form of discrimination.

The impact of public mental health stigma can be substantial. The Ontario Human Rights Commission (n.d.) discuss some specific forms of discrimination that impact this group: for instance, refusal of health care services for someone who has substance addiction or the rejection of a tenant application due to the appearance of mental health issues. The literature exploring healthcare disparities for those labelled with a severe mental illness indicated that they received fewer medical services and experienced higher rates of death from common physical illnesses (Druss et al., 2002; Lawrence & Kisely, 2010). Further exploration on a systemic level as to the exact reasons as to why this occurs is warranted. However, these results are evidence of discrimination towards those with severe mental illness. Other areas discussed are issues of harassment, such as name-calling, as well as systemic discrimination or failures to accommodate those with mental illness. In a global study by Thornicroft and colleagues (2009), the pervasive discrimination experienced by those with schizophrenia was explored, where 47% of individuals experienced discrimination when making or keeping friends, 29% in finding a job, and 29% in keeping a job. Additionally, Brouwers (2020) explains that the negative attitudes held by employers lower the overall chance of being hired. The consequences of having a mental illness extend beyond difficult symptomology and include interactions in all areas of life that can adversely affect overall well-being and quality of life. It is evident there are significant external impacts of public stigma on someone with a mental illness. Moreover, the internal implications of stigma also negatively affect the individual.

Self-Stigma

Self-stigma development begins with and shares the same three components of public stigma with stereotypes, prejudice, and discrimination. The key difference between the two types is that with self-stigma, these beliefs are directed towards oneself. Specifically, Corrigan and colleagues (2011) explain how the progressive model of self-stigma integrates one's view of self alongside the existence of mental health stigma. The model has four stages, beginning with the individual being aware of the stereotypes associated with the mental illness. Once becoming aware, the individual must then agree with the stereotypes related to them and their condition. The individual will then apply those stereotypes specifically to themselves and their experiences. All of this together causes the individual to lower their overall self-esteem and self-efficacy, causing harm to the individual. Rössler (2016) suggests the process of self-stigma begins prior to the individual even having a mental illness. Instead, it begins when they learn and internalize the stereotypes, which usually occur prior to their diagnosis, and then it is turned inwards once the mental illness is pertinent to them. Therefore, the public stigma that is seen and learned by the individual before any mental health issues arising has an impact on the later development of self-stigma.

The negative implications of self-stigma can vary based on the individual. One example is explained by the "why try" effect (Corrigan et al., 2009). This phenomenon is from the lowering of self-esteem and self-efficacy, which results in a lowering of life goal achievements due to the resulting mentality of "Why should I try in the first place?". Overall, the agreeance and application of the stereotypes increase the chance of experiencing self-disrespect, which then leads to behavioural futility (Corrigan et al., 2016). When these feelings, such as hopelessness and shame, are turned inward, they can further negatively affect the individual. For example,

research has suggested that higher levels of self-stigma significantly predicted higher levels of suicidal ideation (Oexle et al., 2017; Rüsch et al., 2019). Furthermore, higher levels of self-stigma have been associated with the development and maintenance of depression (Pyle et al., 2015; Ritsher & Phelan, 2004). Self-stigma also has a positive relationship with isolation and loneliness in those with mental illness (Yildirim & Kavak Budak, 2020; Ritsher & Phelan, 2004). This suggests that as individuals' self-stigma increases, their isolation and alienation level increases. As an individual internalizes and accepts negative labels and stereotypes, this may lead to isolation and greater feelings of loneliness (Yildirim & Kavak Budak, 2020). A vicious cycle can be created with the desire to increase isolation, which can lead to a decrease in help-seeking behaviours and withdrawal from potential supports. The negative repercussions of self-stigma are just as impactful as public stigma and highlight the importance of the reduction to protect individuals from the overall impacts of stigma.

Familiarity

Recently, there has been increasing interest in exploring the influences of familiarity and mental health stigma. More specifically, research has explored its effects on public stigma. Corrigan and Nieweglowski (2019) defined familiarity as “knowledge of, and more importantly experience with, the broad gamut of mental illness and corresponding interactions as experienced by one’s social network” (p. 40). This direct interaction that occurs with familiarity and its possible effects on public stigma follows the contact hypothesis proposed by Allport (1954). This theory states that positive interpersonal contact between different groups can reduce prejudice. Exposure alone will not necessarily lower individuals’ prejudices, but rather, a series of conditions are required, including cooperation, equal status, common goals, and institutional or authority support. When these four conditions are met, research supports the effectiveness of

contact-type interventions in reducing public stigma for adults even more than education-based interventions (Corrigan et al., 2012). Therefore, following the contact hypothesis, familiarity may have a positive impact on lowering individuals' public stigma.

Previous research has suggested a linear relationship where individuals who were more familiar with mental illness tend to exhibit lower levels of mental health stigma. Corrigan and colleagues (2001) explored this phenomenon within college students, and those with some degree of familiarity with serious mental illness were less likely to perceive individuals with psychiatric disorders as dangerous, leading to lower levels of desired social distance. In another study by Penn and colleagues (1994), stigma related to schizophrenia was examined, where participants were presented with a vignette of someone who had recovered from a mental illness and then assessed on their stigma-related attitudes. Similarly, those who knew someone who had a mental illness viewed those in the vignette as less dangerous. Furthermore, the American Psychological Association (2020) suggest that having familiarity with someone with mental illness has been shown to have the greatest impact on lowering public stigma. Overall, research findings have provided support for the notion that experience or familiarity with mental illness relates to lower levels of public stigma. However, recent research has suggested that this relationship is more complicated and may not always follow a strictly linear path.

Family and Familiarity

A unique aspect of familiarity explored in the literature pertains to individuals within the nuclear family. This specifically relates to those who reside within the same household with an individual with mental illness and commonly refers to a spouse, parent, child, or sibling. This close proximity creates a distinct relationship with mental illness as there is a closer level of contact and exposure to the effects compared to other forms such as friendship or even extended

family. Additionally, family members in this position often experience additional impacts such as financial strains, withdrawal from external relationships, and more (Corrigan & Nieweglowski, 2019). This can lead to feeling a sense of burden in the family related to the individual with mental illness (Hasson-Ohayon et al., 2011). Furthermore, it has been suggested that those who are part of the nuclear family experience their own related stigma, termed stigma by association (Corrigan & Nieweglowski, 2019). In a study by Richard-Lepouriel and colleagues (2022), they defined stigma by association as a “broad construct including perceived stigma, experienced stigma and sometimes internalized stigma by relatives of people with mental illness” (p. 179). This form of stigma can lead to negative emotions such as guilt, social isolation and discrimination, and a decrease in the family’s quality of life. Despite the family members not having a mental illness, the impact of someone in the immediate family creates this unique experience compared to other such relationships.

Corrigan and Nieweglowski (2019) emphasize the importance of awareness related to family burden and stigma by association and its impact with the possibility that it could increase one’s level of mental health stigma. However, there is a paucity of data directly exploring the impact of family burden on their level of public stigma. Ng and colleagues (2023) found contradicting evidence, with participants who identified someone in their immediate family as having a mental illness experiencing lower desire for social distance and lower prejudice and exclusion compared to those who did not know anyone with a mental illness. This study was conducted in Hong Kong and authors suggest that these findings may result from cultural values related to protecting family image. Therefore, further understanding and research in this area would help provide insight into the impact of familiarity in terms of the relationship within the nuclear family and public stigma.

Health Care Providers and Familiarity

Those in the health care profession maintain a unique and intimate relationship with those who struggle with mental illness. Despite the expectation of stigma-free care, discrimination against individuals with mental illness remains prevalent within the healthcare system (Henderson et al., 2014; Valery & Prouteau, 2020). For example, in a study that explored mental illness and discrimination, 44% of participants reported discrimination in mental health care (Gabbidon et al., 2014). In a literature review by de Jacq et al. (2016) that focused on nurses, in some of the studies a diagnosis of mental illness resulted in a difference in treatment for a patient even when it was not warranted. Furthermore, nurses (de Jacq et al., 2016) and psychiatrists (Lauber et al., 2004) attitudes toward those with a mental illness were comparable to those of the general public. This is particularly concerning as it is assumed that these groups of individuals have higher professional training related to mental illness that, according to the linear relationship, should aid in lowering their overall mental health stigma.

Corrigan and Nieweglowski (2019) discuss the relationship between health care providers and stigma and explain that the setting they work (i.e., inpatient vs outpatient) may also affect the manifestation of stigma. Such as individuals who encounter patients at their worst in settings such as emergency rooms may be more likely to develop higher levels of stigmatizing attitudes and feel less hopeful. de Jacq and colleagues (2016) echoes this by suggesting perception bias can occur when individuals are frequently exposed to patients being readmitted for care. Henderson and colleagues (2014) suggest that new mental health professionals and those who are experiencing burnout are in the most need of mental health stigma intervention. This supports the argument from Corrigan and Nieweglowski (2019) that suggests burnout and associative stigma can lead to greater levels of public stigma. An individual's disengagement due to burnout

and the feelings of blame or ineffectiveness in their profession could lead to higher levels of stigma. Overall, these studies highlight the unique relationship health care professionals have with those who have mental illness and the possibility that greater familiarity with mental illness does not necessarily result in less stigma.

Personal Mental Illness and Familiarity

Primarily, research has focused on assessing the level of public stigma related to those who work in the mental health field, who are close family members, coworkers, and even those who have no familiarity or relationship at all. However, within the literature, there seems to be less discussion and exploration into the impact of personal mental illness on levels of public stigma. Those who have a mental illness have a unique experience compared to other groups as they have lived experience with the symptoms and outcomes of the mental illness. Furthermore, they likely experience the implications of public and self-stigma, all contributing to create a distinct form of familiarity. Understanding how this impacts an individual not only would help provide a further understanding of familiarity and public stigma, but it would also aid in understanding how someone with mental illness views the world and others compared to themselves.

Teachman and colleagues (2006) explored the potential impact of bias on public stigma in individuals diagnosed with a mental illness. It was hypothesized that the impact of personal negative experience with public stigma on those with mental illness, combined with personal education and increase exposure to others with mental illness, would result in lower levels of public stigma in this population compared to the general population. However, there was not a significant difference between those who had a mental illness diagnosis and those without as they had generally equal negative evaluations of those with mental illness. The researchers

suggest that this is because individuals with mental illness often internalize the negative views they encounter through public and self-stigma and apply these same views to others with mental illness. Ng and colleagues (2023) assessed the level of public stigma related to familiarity in Hong-Kong including for those who have a mental illness. Current mental health status along with the current degree of personal well-being showed mixed results related to prejudice and exclusion attitudes. Those with personal experience showed higher levels of public stigma related to prejudicial attitudes. Conversely, those with better levels of personal well-being had more positive views on recovery and reintegration with overall prejudice and exclusion attitudes. The authors suggest that knowledge about mental illness is influenced less by one's mental health status itself, and more by personal awareness and lived experience of stigma (Ng et al., 2023). This emphasizes the need for further exploration of the pattern of public stigma for those with mental illness.

U-Shaped Model of Public Stigma and Familiarity

As suggested previously, the linear relationship may not fully capture the relationship of all types of familiarity and their degree of public stigma. Recently, Corrigan and Niewegloswski (2019) have proposed a U-shaped model whereby those who are unfamiliar with mental illness and those who are the closest to mental illness endorse the highest level of public stigma that overall may better represent the relationship. In the paper review, the authors explain how the first part of the U-shaped curve still captures the idea that those who generally have limited familiarity with mental illness show higher levels of public stigma. For example, someone who has a coworker who experiences difficulties with mental illness would show lower levels of public stigma compared to someone who does not know anyone who has a mental illness. However, the model deviates from a strictly linear model based on categorical relationship type,

and is suggested to be dependent on the level of familiarity or relationship an individual has with someone with mental illness (i.e., a negative relationship between intimacy and mental illness). The second part of the model shows the opposite pattern, with those who have a much closer relationship to someone with a mental illness endorsing higher levels of stigma. While the U-shaped model has not been empirically supported by existing research, it helps explain why certain relationships have a positive association with public stigma (Corrigan & Niewegloswski, 2019). They specifically suggest that the upswing in levels of public stigma is “when familiar relationships evolve to intimacy” (p. 41). While some research has explored this general idea, a deeper understanding is needed to fully understand this relationship and potentially provide evidence for the U-shaped model.

The measurement of familiarity is also important to understand as it has varied across the literature, with some research adopting a dichotomous strategy involving yes or no questions and others advocating for a dimensional measure based on the type of relationship itself (Corrigan & Niewegloswski, 2019). This creates inconsistencies across the literature without having a consensus of the best way to measure familiarity. Familiarity is most often measured with the Level of Contact Report (Holmes et al., 1999). This measure is helpful in that it provides a ranking for the individual in terms of their level of familiarity, with the highest familiarity rating for the item “I live with a person who has a severe mental illness” at 11 points and “I have a severe mental illness” for a maximum score of 12 points. While it provides more information compared to dichotomous measures of familiarity, it assumes certain relationships will automatically be more intimate due to proximity or exposure to this person. If familiarity is dependent on the evolution of intimacy, as suggested by Corrigan and Niewegloswski (2019) it

would provide more information to assess the level of intimacy within the relationship directly rather than assuming the degree of it based the label of the relationship.

Intimacy

We generally attribute the degree of familiarity to how close someone is to the individual. For example, someone who lives with an individual is viewed to have more familiarity with the person compared to a coworker. While in some circumstances this may be true, in others it may not. Understanding familiarity in terms of the degree of intimacy is a much more accurate representation of the relationship compared to the general label that someone has with another individual. Intimacy is commonly used and discussed in romantic relationships; however, intimacy can be broader than that. Jamieson (2007) discussed intimacy in terms of “a very particular form of ‘closeness’ and being ‘special’ to another person founded on self-disclosure” (p. 1). Intimacy in terms of the relationship of familiarity and mental health stigma has been suggested throughout the literature; however, the arguments have varied. Corrigan and Niewegloski (2019) propose the increase in intimacy is the cause of the inverse relationship. Contrarily, Ng and colleagues (2023) suggest anti-stigma campaigns focus on increasing emotional intimacy as a way to increase appreciation towards those with mental illness. Therefore, exploring intimacy as an underlying factor that determines the degree of familiarity and its relationship with public stigma may provide a greater contextual understanding of the relationship as a whole.

Gaps in the Literature

Research has primarily explored the effects of public stigma and the development and impact of self-stigma on those with mental illness. While this is important knowledge that informs anti-stigma interventions to aid in help-seeking and prevention of negative effects of

treatment from stigma, a gap in the literature remains as it related to overall contextual understanding of stigma and the mechanisms that underly the construct (Ng et al., 2023). Since the relationship between familiarity and public stigma does not consistently show a linear relationship, further research exploring the overarching relationship of familiarity and stigma is required. The proposal of the U-shaped model, while commonly referenced, has limited research to support the model. Ng and colleagues (2023) tried to replicate the model within individuals from Hong Kong, however, they did not find the same relationship between immediate family members and public stigma. Furthermore, there is a lack of research exploring the effects of personal mental illness on the model. In relation to the model, familiarity has primarily been explored in terms of the label of the relationship. Exploring familiarity in terms of intimacy on a continuous measure may allow for a stronger and more accurate representation of the relationship as a whole. While the impact of intimacy within the familiarity and mental health relationship has been suggested throughout the literature (Corrigan & Niewegloski, 2019; Ng et al., 2023), further examination has been scarce. Overall, multiple gaps exist in this area and exploring the relationship of intimacy and mental health stigma will provide more contextual understanding and insight into the underlying mechanisms that perpetuate stigma in some individuals versus others.

Present Study

The aim of the present study is to explore the relationship between familiarity and mental health stigma, specifically public stigma. Familiarity will be explored in terms of intimacy as a continuous measure to further understand how the relationship with someone with mental illness may affect their levels of public stigma not just in terms of the label of their relationship. Furthermore, those with mental illness will be assessed on their levels of public stigma, allowing

for exploration regarding on how their perception of those with mental illness may be related to their level of self-stigma. Four main hypotheses for the present study have been determined:

H1: When measuring familiarity in terms of intimacy, the relationship between intimacy and public (endorsed) stigma is better represented by a quadratic relationship compared to a linear relationship when controlling for mental illness. This is based on the theoretical framework proposed by Corrigan and Nieweglowski (2019).

H1a: More specifically, individuals low in intimacy, and high in intimacy, will demonstrate higher levels of public (endorsed) stigma compared to individuals who endorse moderate intimacy with someone with mental illness when controlling for endorsement of mental illness.

H1b: As there is limited research in this area, an exploratory analysis will be conducted to analyze the relationship between intimacy and public (endorsed) stigma for those with a mental illness.

H2: For individuals with mental illness, there will be a positive relationship between self-stigma and public (endorsed) stigma as suggested by Vogel and colleagues (2007).

H2a: The relationship between individuals with mental illness and the public (endorsed) stigma outcomes will be analyzed. Ng and colleagues (2023) found mixed results between mental health status and the different public stigma outcomes, suggesting potential mixed results in the relationship depending on the outcome. Therefore, this analysis will be exploratory to better understand the direction of the relationship.

Methods

Participants

Participants ($n = 523$) consisted of university students from undergraduate psychology courses at Lakehead University in Thunder Bay, Ontario, Canada. Students were recruited using Lakehead University's SONA system and received 0.5 bonus credits for their participation. Participants' ages ranged from 16 to 60 years of age ($M = 22.14$, $SD = 6.38$, $Mdn = 20.00$). A majority of participants identified as female (79.9%), white (69.2%), single (53.9%), and in their first year of university (52.4%). The majority of participants were from the Health and Behavioural Science faculty (69.0%), which includes psychology, nursing, kinesiology, health sciences, and social work students. The full distribution of the demographics can be found in Table 1.

Measures

Familiarity/Intimacy

The Miller Social Intimacy Scale (MSIS; Miller & Lefcourt, 1982) was used to assess participants' level of intimacy with a person they know with a mental illness. This 17-item measure examines intimacy within a specific, identified interpersonal relationship (Appendix A). To ensure inclusivity for the individuals the participants selected when completing this questionnaire, the original he/she pronouns in the instrument were modified to they/them. Participants were asked 6 frequency-based questions that range from 1 (*very rarely*) to 10 (*almost always*) and 11 intensity rating scale questions that range from 1 (*not much*) to 10 (*a great deal*). The original scale provides scores ranging from a minimum of 17 to a maximum score of 170, with higher scores indicating a greater level of intimacy with the person. In order to capture participants who reported not knowing someone with a mental illness, the scale was

rescaled from a 1-10 to a 0-9 format, resulting in possible scores ranging from 0 to 153 for the final analysis (i.e., individuals who did not identify knowing someone with a mental illness were assigned a score of 0). Although this transformation does not substantially change the scale's interpretation, it provides an anchor point to reflect those who do not have an intimate relationship and resolves the gap between a score 0 and the original minimum score of 17. From the original study, Miller and Lefcourt (1982) reported a Cronbach's alpha of .91. Downs and Hillje (1991) specifically assessed the internal consistency for mixed and same-sex pairings and had adequate reliability ranging from 0.87 to 0.95. For this study, Cronbach's alpha for the modified scale was within an adequate reliability range of .97.

Public Stigma Measures

Participants responded to three measures that assessed their knowledge, attitudes, and behaviours related to mental health stigma.

Mental Health Knowledge Schedule. Participants completed the 12-item Mental Health Knowledge Schedule (MAKS; Evans-Lacko et al., 2010), which assessed mental health knowledge in two parts (Appendix B). The first part comprises statements in the following areas: help-seeking, recognition, support, employment, treatment, and recovery. The second part of the measure lists six conditions and asks participants to classify if they are diagnosable mental illnesses. Participants responded to both parts on a 5-point Likert scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*). Total scores for the MAKS range from a minimum of 12 to a maximum of 60 points, with higher scores representing the higher amount of mental health-related knowledge. MAKS has an acceptable internal consistency with a Cronbach's alpha level of 0.65 (Evans-Lacko et al., 2010). Within this study, the reliability of the MAKS fell in the poor

range, with an overall Cronbach's alpha level of .55, and subscale alphas of .43 for Part A and .39 for Part B.

Community Attitudes Towards the Mentally Ill. Participants responded to the 12-item Community Attitudes Towards the Mentally Ill (CAMI-12; Illic et al., 2014) questionnaire. This is a modified version of the original CAMI that had 40-items and measured attitudes towards mental illness (Taylor & Dear, 1981). The CAMI-12 assesses levels of mental health stigma and tolerance and, more specifically, can be separated into two subscales, 'Prejudice and Exclusion' and 'Tolerance and Support' (Appendix C). Responses were on a 5-point Likert scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*), with scores ranging from 12 to 60, with a higher score indicating more positive attitudes towards those with mental illness. Both subscales for the CAMI-12 have acceptable internal consistency, with the 'Prejudice and Exclusion' subscale having a Cronbach's alpha of 0.77 and 'Tolerance and Support' having an alpha of 0.67 (Illic et al., 2014). However, in this study, the alpha fell below the acceptable range at .48 for the total score, .21 for the Tolerance and Support subscale, and .39 for Prejudice and Exclusion subscale.

Reported and Intended Behaviour Scale. Participants completed the 'Intended Behaviours' subscale of the Reported and Intended Behaviour Scale (RIBS-IB; Evans-Lacko et al., 2011). This four-question subscale assesses an individual's willingness to interact with someone with a mental illness in the future in the following domains: living with, working, living nearby, and friendship with (Appendix D). Participants responded on a 5-point Likert scale on their willingness to engage in future behaviours ranging from 1 (*strongly unwilling*) to 5 (*strongly willing*). Higher scores for the RIBS-IB suggest more willingness to approach and interact with someone with mental illness. The internal consistency for the RIBS-IB is good,

with a Cronbach's alpha of 0.85 (Evans-Lacko et al., 2011). This study also found good internal consistency with $\alpha = .87$.

Self-Stigma

Participants who disclosed if they have or have had a mental illness (current or past) completed the Self-Stigma of Mental Illness Scale – Short Form (SSMIS-SF; Corrigan et al., 2012). The SSMIS-SF (see Appendix E) considered the critiques associated with the original 40-item SSMIS measure to allow for easier administration and to address previous concerns related to offensive language (Corrigan et al., 2012). The SSMIS-SF is a 20-item measure that assesses different aspects of self-stigma based on a 9-point scale ranging from 1 (*strongly disagree*) to 9 (*strongly agree*) that assesses different aspects of self-stigma. There are four subscales: Awareness, agreement, apply to self, and harm to self-esteem. The scale is scored by the sum of each subscale, with each subscale score ranging from a minimum of 5 to a maximum of 45, with higher scores indicating higher endorsement of self-stigma (Appendix F). Within the original study, Corrigan (2012) and colleagues assessed the reliability and validity of the SSMIS-SF based on data from three previous studies and found adequate internal consistency with alpha levels ranging from .65 to .87. Within this study, Cronbach's alpha also fell within an acceptable reliability range of .84 for the total scale and a range of .70 to .92 for the subscales.

Procedure

Participants completed the online survey using the SurveyMonkey platform. After consenting to the study, participants completed a demographic questionnaire (Appendix G) that assessed their age, sex, gender, marital status, program and year of study. Additionally, participants responded to a series of questions related to mental illness, including “Do you identify as someone who has a mental illness?” and “Have you ever received treatment related to

your mental health?”. Participants next completed three public stigma questionnaires.

Participants who endorsed knowing someone with mental illness were asked to identify the relationship (e.g., mother, friend, coworker, etc.) and then completed the intimacy questionnaire based on the identified person. Once participants completed the intimacy questionnaire, they were asked based on their best knowledge, to identify the category of mental illness that best fit the identified individual. Participants with a mental illness (past or present) then completed the self-stigma questionnaire. All participants received debriefing information upon completion of the study measures.

Statistical Analysis

Data were analyzed with SPSS Statistics software version 29. Descriptive analyses were completed to understand the demographics of the survey sample. To test H1 and H1a, three hierarchical regression analyses using ordinary least squares (OLS) estimation were conducted to examine the relationship between the three public stigma measures and the intimacy measure. This allowed for the analysis of both a linear model and a quadratic model to compare and assess which model fit best. For the exploratory H1b, a hierarchical regression analysis was also conducted on the subgroup of individuals who endorsed current or prior mental illness and are referred to as the “lived experience of mental illness” group throughout the analysis. The same evaluation between linear and quadratic models was completed with this group. To test and analyze H2, a general linear regression was used to assess the relationship between self-stigma and public stigma. For the exploratory H2a, descriptive statistics were used to compare the degree of public stigma in individuals with lived experience of mental illness and those without.

Results

Data Screening and Cleaning

A total of 544 students were recruited for the study. Of these participants, 18 were removed as they did not complete any measures, did not complete any measures past the demographic questionnaire, or did not complete key measures needed for study analyses. An additional three participants were removed when multivariate outliers were assessed, which will be discussed further below. With the removal of these participants, our final sample size was 523 participants.

Due to an unknown platform error, one participant who did not have or ever have had a mental illness was shown and completed part of the self-stigma questionnaire. While their other completed data was preserved, their data was removed for the analyses related to self-stigma.

Missing Data

A single-imputation expectation maximization (EM) approach was used to handle missing data, as less than 5% of the data were missing, and the pattern appeared to be random (Tabachnick & Fidell, 2014).

Outliers

The data were assessed for univariate and multivariate outliers to ensure the individual scores on each variable and the combination of scores between the variables were reasonable. Due to the limited number of outliers identified overall, each case was evaluated individually. The total scores for each measure were transformed and analyzed for extreme standardized scores. Z -scores greater than ± 3.3 were recoded to the next largest and acceptable total scores. Three scores were identified out of range, one from each of the public stigma questionnaires.

Due to the scores being from three different individual participants, these participants were retained, and the outliers were adjusted to the next highest score.

Potential multivariate outliers were analyzed by computing the Mahalanobis distance for each case. A total of two cases were identified, and the recommended cut-off score was exceeded (Tabachnick & Fidell, 2014). These two participants were therefore removed from the final dataset. When the Mahalanobis distance was re-run (Tabachnick & Fidell, 2014), an additional case was flagged. This participant also had an extreme score at the prior univariate screening stage, and so the decision was made to remove this participant from the dataset. When the analysis was conducted a final time, no additional outliers were identified.

Statistical Assumptions

Normality, homogeneity of variance, linearity, and multicollinearity assumptions were assessed to ensure the planned statistical analyses were suitable.

Normality. The normality assumption was initially assessed through visual inspection of histograms and review of the Shapiro-Wilk test results. The Shapiro-Wilk tests were statistically significant ($p < .001$), and the histograms showed an evident skew of the data, suggesting deviation from normality. However, statistical normality tests, including the Shapiro-Wilk test, can be sensitive to large sample sizes as they become overpowered and are likely to be significant even with minor normality deviations (Meyers, 2005; Tabachnick & Fidell, 2014). Therefore, this assumption was further evaluated by examining the residuals with visual inspection of Q-Q plots and scatterplots. While some variables demonstrated normally distributed residuals, others showed signs of non-normality (e.g., skewed histogram, deviation from the line of best fit in Q-Q plots). However, given the reasonably large sample size and the focus on model estimation and hypothesis testing, the data were not transformed, and the OLS

regression was deemed appropriate despite some deviation from normality. This aligns with the recommendations by Ernest and Albers (2017), who note that OLS regression is robust to modest violations of normality, particularly when sample sizes are adequate.

Homogeneity of Variance. The homogeneity of variance was assessed through visual inspection of the standardized residual scatterplots. No clear funnelling or clustering pattern was observed, suggesting that the assumption was reasonably met. Additionally, the standardized residuals were reviewed to ensure they fell within the acceptable range of ± 3 standard deviations. Although a small number of residuals slightly exceeded $+3$, these were minimal and did not raise concern when reviewing the overall scatterplots. Therefore, the assumption of homoscedasticity was considered acceptable.

Linearity. To assess the linearity assumption, visual inspection of a scatterplot was conducted of standardized residuals compared to the standardized predicted values for each public stigma measure. In all cases, the plots appeared to be randomly dispersed without any clear evident patterns or shapes, suggesting the assumption of linearity to be adequately met.

Multicollinearity. Pearson r correlations were used to assess the potential multicollinearity of the data to ensure variables were not too highly correlated. All variables (refer to Table 2) were within an acceptable range, with all correlations being under .90 (Tabachnik & Fidell, 2014).

Descriptive Statistics

Participants were asked to identify the mental illness they felt best fit the individuals they used to complete the intimacy questionnaire, with the majority of participants selecting a mood disorder (69.92%). The full breakdown of the mental illness categories can be found in Table 3. The Cronbach's alphas, means, and standard deviations for each study measure can be found in

Table 4. Exploratory examination of inter-item correlations indicated generally weak associations for the MAKS (most $< .25$) and the CAMI-12 (most $< .35$), which likely contributed to the lower alpha levels.

Intimacy as a Predictor of Public Stigma

A series of hierarchical regression analyses were conducted to explore the impact of intimacy with someone with mental illness on an individual's level of public stigma. Separate analyses were completed for each of the three measures of public stigma. Personal experience with mental illness was entered as the first block. The predictor variable of intimacy was added in the second step, and finally, a quadratic term was added in the final step. Additionally, visual representations of the relationship for each measure are provided in Figures 1-3. As we modified the intimacy measure to retain participants who did not know anyone with a mental illness, supplementary regressions (Appendix H) and scatterplots (Appendix I) were conducted for each public stigma measure excluding these individuals.

Mental Health Knowledge Schedule

The overall model was significant when controlling for personal mental illness $F(1, 519) = 38.20, p < .001, R^2 = .07, \text{Adj. } R^2 = .07$. The addition of intimacy significantly improved the model, $\Delta F(1, 518) = 52.28, p < .001$. Overall, intimacy was a significant predictor ($\beta = .31, p < .001$) of public stigma. The overall model fit for step 2 was $F(2, 518) = 47.13, p < .001$ with an R^2 of 0.15. Finally, the quadratic term did not account for additional variance ($\Delta F(1, 517) = .01, p = .921$) but the overall model remained significant, $F(3, 517) = 31.36, p < .001, R^2 = .15, \text{Adj. } R^2 = .15$. While the linear term remained a statistically significant predictor ($\beta = .30, p = .05$), the quadratic term did not significantly contribute to the prediction ($\beta = .02, p = .92$).

Community Attitudes Towards the Mentally Ill

The overall model was significant when controlling for personal mental illness, $F(1, 519) = 36.85, p < .001, R^2 = .07, \text{Adj. } R^2 = .06$. and significantly improved when introducing the linear intimacy term, $\Delta F(1, 518) = 74.25, p < .001$. In step 2, intimacy was a significant predictor of CAMI-12 scores ($\beta = .37, p < .001$), and the overall model was significant $F(2, 518) = 58.15, p < .001$ with an R^2 of 0.18. In step 3, adding the quadratic term into the model did not improve the model fit ($\Delta F(1, 517) = 1.39, p = .24$), but the model remained significant $F(3, 517) = 39.26, p < .001, R^2 = .19, \text{Adj. } R^2 = .18$). The linear ($\beta = .20, p = .19$) and the quadratic term ($\beta = .18, p = .24$) were non-significant predictors of intimacy in the full model.

Reported and Intended Behaviour Scale

Overall, when controlling for mental illness, the model was statistically significant $F(1, 519) = 52.27, p < .001, R^2 = .07, \text{Adj. } R^2 = .09$. Intimacy significantly predicted lower stigma-related behaviour ($F(2, 518) = 88.21, p < .001, R^2 = .25, \text{Adj. } R^2 = .26$) and improved the model when the linear term was introduced $\Delta F(1, 518) = 112.89, p < .001$. Intimacy was a significant predictor of RIBS-IB scores ($\beta = .43, p < .001$). The quadratic term did not significantly improve model fit, $\Delta F(1, 517) = 3.49, p = .062$, although it was marginal. The overall model remained significant $F(3, 517) = 60.25, p < .001$, with neither linear ($\beta = .17, p = .22$) nor the quadratic term ($\beta = .27, p = .06$) being significant predictors once the quadratic term was added.

Sub-Analysis with People with Lived Experience

A sub-population exploratory analysis only included the lived experience of mental illness group ($n = 227$). The same approach was taken to compare the linear next to the quadratic model to assess the best fit.

Mental Health Knowledge Schedule. Intimacy significantly predicted MAKES scores ($R^2 = .04$, Adj. $R^2 = .03$, $F(1, 225) = 8.43$, $p = .004$) with higher intimacy associated with greater mental health knowledge ($\beta = .19$, $p = .004$). Introducing the quadratic term did not significantly improve the model's explained variance, $\Delta F(2, 224) = 0.38$, $p = .54$, but the overall model remained significant $F(2, 224) = 4.39$, $p = .01$, $R^2 = .04$, Adj. $R^2 = .03$. The full model did not result in the linear ($\beta = .33$, $p = .17$) or the quadratic term ($\beta = -.15$, $p = .54$) being significant predictors.

Community Attitudes Towards the Mentally Ill. For the CAMI-12, intimacy was a significant predictor when the linear term was introduced, $F(1, 225) = 19.07$, $p < .001$, $R^2 = .08$, Adj. $R^2 = .07$, with intimacy showing a significant positive association with CAMI-12 scores ($\beta = .19$, $p < .001$). Addition of the quadratic term did not improve the model, $\Delta F(1, 224) = 0.26$, $p = .61$, but the overall model remained significant $F(2, 224) = 9.63$, $p < .001$, $R^2 = .08$, Adj. $R^2 = .07$. Neither the linear ($\beta = 0.17$, $p = .48$) or the quadratic term ($\beta = .12$, $p = .61$) were significant predictors of CAMI-12 scores in the final model.

Reported and Intended Behaviour Scale. Finally, intimacy significantly predicted RIBS scores ($F(1, 225) = 39.66$, $p < .001$, $R^2 = .15$, Adj. $R^2 = .15$), with a significant positive association ($\beta = .39$, $p < .001$). The model remained significant when adding the quadratic term ($F(2, 224) = 20.00$, $p < .001$, $R^2 = .15$, Adj. $R^2 = .14$), but this did not significantly improve the model fit ($\Delta F(1, 224) = 0.44$, $p = .51$). Neither the linear ($\beta = .24$, $p = .28$) or the quadratic term ($\beta = .15$, $p = .51$) were significant in the final model.

Exploratory Analysis

To understand the relationship between self-stigma and public stigma in this student sample, a simple linear regression was performed as an exploratory analysis. Correlations between the measures of public stigma, intimacy, and self-stigma can be found in Table 5.

Does Public Stigma Predict Self Stigma?

Only participants with lived experience of mental illness and who completed the self-stigma measure were included in this analysis ($n = 227$), which examined mental health knowledge (MAKS), attitudes towards mental illness (CAMI-12), and social distance (RIBS-IB) as predictors of self-stigma total scores. For the MAKS, the overall model was not statistically significant, $F(1, 225) = 1.73, p = .19, R^2 = .01$. MAKS scores did not significantly predict an individual's self-stigma scores ($\beta = -.09, p = .19$). For the CAMI-12, the overall model was statistically significant ($F(1, 225) = 6.51, p = .01$). CAMI-12 scores did significantly predict self-stigma scores ($\beta = -.17, p = .01$) and accounted for 3% of the variance. Finally, for the RIBS-IB, the overall model was also statistically significant, $F(1, 225) = 9.37, p = .002, R^2 = .04$. Similar to the CAMI-12, the RIBS-IB significantly predicted an individual's self-stigma scores ($\beta = -.20, p = .002$). For the CAMI-12 and RIBS-IB, as scores increased (indicating less public stigma), self-stigma decreased (indicating lower self-stigma).

To further understand the relationship, an exploratory post-hoc analysis was conducted between the public stigma measures and the four subscales from the SSMIS-SF: Aware, Agree, Apply, and Hurt Self. The results from the linear regression analysis can be found in Table 6. Although the MAKS was not a significant predictor of an individual's level of self-stigma overall (as above), it did significantly predict scores on the Aware subscale (Table 6). Additionally, the RIBS-IB scores significantly predicted the Aware, Agree, and Apply self-stigma subscales.

RIBS-IB was not found to be a significant predictor of the Hurt Self subscale. The CAMI-12 scores were a significant predictor across all four self-stigma subscales.

To examine the differences in public stigma scores between participants with and without lived experience of mental illness, an independent sample *t*-test was conducted. Descriptive statistics comparing the degree of public stigma between those with lived experience with mental illness and those without can be found in Table 7. Participants with lived experience of mental illness scored significantly higher on the MAKS ($t(485) = 7.23, p < .001$, Cohen's $d = .66$), the CAMI-12 ($t(485) = 7.78, p < .001$, Cohen's $d = .71$), and the RIBS-IB ($t(485) = 9.09, p < .001$, Cohen's $d = .83$).

Discussion

The primary purpose of the present study was to explore the relationship between familiarity in terms of intimacy and public stigma, to expand our overall contextual understanding of this relationship. Specifically, based on a U-shaped model proposed by Corrigan and Nieweglowski (2019), we wanted to investigate whether a linear or a quadratic model best fit the relationship. A quadratic model would support their hypothesis that stigma is related to the degree of intimacy in a relationship rather than a linear relationship with familiarity. This relationship was also examined in participants who identified as having a mental illness to explore if the relationship follows a similar pattern for this sub-group. The secondary aims of this study were to examine the relationship between public stigma and self-stigma; specifically, to test in a sample of participants highest in familiarity with mental illness (i.e., those with mental illness themselves) the relationship between self-stigma and public stigma. Additionally, an exploratory analysis was used to compare public stigma scores between those who identified as having or have had a mental illness and those who did not.

Intimacy and Public Stigma

The primary hypothesis that there is a quadratic relationship between public stigma and intimacy was not supported by the results. Our hypothesis, based on the theoretical framework of Corrigan and Nieweglowski (2019), predicted that a quadratic model would better fit the data. Specifically, we expected participants with low levels of intimacy and those with high levels of intimacy (with a person in their life with a mental illness) would show the highest levels of public stigma. For all three public stigma variables used in separate models, a linear model was a better fit than a quadratic model. This finding suggests that as an individual's level of intimacy with someone with mental illness increases, the less public stigma they endorse. More specifically, as an individual's intimacy scores increased, the higher participants scored on their level of mental health knowledge, positive attitudes towards those with mental illness, and willingness to interact with someone with mental illness.

To our knowledge, examining familiarity specifically in terms of one's level of intimacy has not been previously explored. Prior studies have examined familiarity in terms of the label of the relationship, assuming the degree of closeness based on the label (ex., mother, friend, coworker, etc.). Ng and colleagues (2023) also wanted to assess the possibility of the U-shaped model to describe the relationship between familiarity and public stigma. However, they found that those within the nuclear family (expected to have the highest level of familiarity) had lower levels of public stigma, opposite to what they were expecting, especially compared to those who did not know anyone with mental illness. While Ng and colleagues (2023) discussed the potential of a linear model to better represent this relationship, they also suggested the possibility of cultural influences potentially "hiding" public stigma due to social desirability, for example.

As we did not focus on the relationship type and our sample is predominately white, we are unable to further examine the possibility within the current study.

In addition to the possibility that a linear relationship best represents the association between familiarity (intimacy) and public stigma, there are other factors to consider. One reason may be our sample. Most participants completed the intimacy measure based on a “friend”. While a goal of this research was to move away from relationship type to determine familiarity, it may explain why the quadratic model was not supported. Within the proposed U-shaped model, individuals from the “friend” category fall within the lower part of the curve, indicating lower levels of public stigma. This is because friends typically do not experience the same close proximity and exposure or impacts of mental illness financially and interpersonally that individuals in the home do (Corrigan & Nieweglowski, 2019; Hasson-Ohayon et al., 2011). Additionally, when exploring the range of scores on the intimacy measure, a low number of participants in our sample had scores greater than 135. Therefore, our data may only represent the descending portion of the U-shape and miss the upswing of stigma as proposed in the model.

Despite Corrigan and Nieweglowski suggesting that the U-shaped model better captures the complex relationship between the types of familiarity and their degree of public stigma, there remains a lack of empirical evidence to support the whole model. While some aspects of the current study and Ng and colleagues (2023) have shown a similar pattern to the quadratic model, neither fully supported the U-shaped model. Instead, both studies highlight the nuanced aspects of the relationship. The present study found a linear relationship where increased intimacy was associated with lower levels of public stigma. These findings suggest a need to reconsider the universality of the U-shaped model. It is possible that the upswing in public stigma at high levels

of familiarity is context-dependent and was missed being captured in this study, such as cohabitation with the individual with mental illness or degree of stigma by association.

Additionally, a continuous measure of intimacy was used; it is possible that perceived closeness or degree of subjective intimacy may be driving the stigma reduction. For example, closer and more intimate relationships create empathy, insight and knowledge which can all help reduce stigma. This interpretation aligns with the contact hypothesis that positive interpersonal contact reduces prejudice (Allport, 1954) and the research supporting contact-based interventions (Corrigan et al., 2012). It is possible that understanding familiarity in terms of intimacy rather than broad categories (i.e., friend, family, etc.) may more accurately reflect familiarity as a construct, which could explain why a linear relationship was found in this study. It also highlights the importance of considering how familiarity is defined and measured, as this may influence the ability to capture the potential protective effects against public stigma fully.

As discussed previously, those with lived experience of mental illness have a unique relationship and perspective with mental illness, which may translate into a distinct impact on their degree of public stigma. A sub-hypothesis and exploratory analysis were therefore conducted due to the limited research focused on individuals with that lived experience and its impact on intimacy and public stigma. Similar results emerged as the pattern with the overall sample: higher degrees of intimacy were associated with higher levels of mental health knowledge, positive attitudes, and lower prejudice and exclusion towards those with mental illness. This was contrary to previous research that found that personal mental illness was associated with higher levels of prejudice and exclusion attitudes (Ng et al., 2023). As our sample were students and predominantly from the Health and Behavioural Science faculty compared to Ng and colleagues who used a general population in Hong Kong, the difference

may be a result of the populations used. The personal experience and education together may foster a stronger sense of empathy toward others similar to them. Within this subgroup, some models were statistically significant but explained only a small portion of the variance. However, this aligned with Ng and colleagues (2023) who also stated although there was a low variance explained, their predictors were still significant. Taken together, these findings highlight both the complexity of factors that influence stigma and the potential value of including additional predictors. Overall, it emphasizes the need for further research on how lived experience can influence an individual's level of public stigma.

Public Stigma and Self-Stigma

The literature suggests a strong interconnection between self-stigma and public stigma, with a positive predictive relationship as proposed by Vogel and colleagues (2007). Since they share the same developmental foundation with stereotypes, prejudice, and discrimination, it was expected that public and self-stigma would be closely linked. In the post-hoc exploratory analysis, the associations were generally small to moderate, but in the expected direction. Since higher scores on the public stigma measures reflect more knowledge, positive attitudes towards, and less social distance towards mental illness, these findings suggest a positive relationship: those who have lower overall public stigma reported low levels of self-stigma. This association suggests individuals with low public stigma may extend that same kindness and understanding towards themselves. At the other end, those who endorse negative attitudes toward people with mental illness may internalize those beliefs leading to increased self-stigma. Interestingly, the aware subscale followed the opposite pattern showing positive correlations with all the measures including intimacy. This may reflect that those with greater mental health knowledge and more positive attitudes may be more aware of the stereotypes that exists in society. It also

provides support that awareness does not necessarily translate into agreement or application of these stereotypes (Corrigan & Rao, 2012). Taken together, these findings highlight the complex relationship between public and self-stigma and although these are small to moderate correlations and does not determine directionality, they provide preliminary insight into the relationships, which were explored more directly in the regression analyses.

The secondary hypothesis that public stigma would predict self-stigma was partly supported. The CAMI-12 and the RIBS-IB showed a significant association with self-stigma total scores, but the MAKES did not. These findings indicate that those with higher levels of positive attitudes towards and willingness to interact with someone with mental illness showed lower levels of self-stigma. However, the regression models for the CAMI-12 and RIBS-IB only explained a small amount of the variance. Therefore, while statistically significant, it is an overall small effect size. For the MAKES (mental health knowledge), while following a similar trend, the relationship was not significant. However, there was a significant finding for the agree subscale when exploring the relationship in more detail based on the four-stage model. This component reflects the participant's endorsement of negative stereotypes. This finding suggests that those who have more knowledge about mental health may be less likely to agree with negative stereotypes about mental illness. While this does not affect all parts of self-stigma, mental health literacy could play a crucial role in reducing self-stigma. These findings align with Ng and colleagues (2023) and suggest that mental health knowledge may operate independently from mental health attitudes and desire for social distance.

Finally, in the exploratory sub-hypothesis between individuals with lived experience of mental illness and individuals without, those who endorsed a mental illness report lower levels of overall public stigma. Given the observed differences, further post-hoc comparison testing

showed that all three public stigma measures significantly differed between the two groups. This suggests that those with lived experience have higher levels of mental health literacy, positive attitudes, and lower prejudice and exclusion towards those with mental illness, which may be because of their own understanding of mental illness along with empathy towards others who have it. These were observed to be medium to large effects. Additionally, personal experience with stigma may also provide insight and understanding towards others in similar positions, in hopes of treating others better than they have been. This is in contrast to Ng and colleagues (2023) who reported that those with personal experience had higher levels of stigma compared to those who did not know anyone with mental illness. As this analysis was exploratory in nature due to the mixed findings when adding current mental health status in the study, it was interesting to note the differences found. This highlights the importance of future research to continue exploring this relationship to determine the impacts of personal mental illness on public stigma.

Future Research

This study contributes to the limited research that exists on the contextual understanding of the relationship between familiarity and public mental health stigma. However, additional exploration is still required in this area to delineate the mechanisms of this complex relationship. To begin, future studies should incorporate a larger and more general non-student sample. As discussed previously, this study may have only captured one aspect of the U-shaped model because of the population that was used. Purposeful sampling of participants that identify as nuclear family members and participants from the healthcare fields may provide stronger evidence for that upswing that is hypothesized.

Despite the evidence of healthcare workers experiencing higher levels of stigma due to a variety of reasons (de Jacq et al., 2016; Henderson et al., 2014) this population was not explicitly captured within this study. Future studies would benefit from exploring the effects of close/intimate personal relationships with someone with a mental illness for healthcare workers to assess if it follows the same linear trend. If it does, it may serve as a protective factor for healthcare workers against the public stigma that can develop due to the healthcare setting (Corrigan & Nieweglowski, 2019). However, if it does not, this would provide important contextual understanding for this specific group of individuals and how we must target lowering their level of public stigma. Additionally, the intimacy measure used only assessed perceived closeness with the person they felt closest to with a mental illness. As such, it only focused on one type of intimacy and did not capture intimacy in relationships with all people with mental illness or intimacy within all types of relationships such as the health care professional – patient relationship. Developing a measure that is more comprehensive of all forms of intimacy is a methodological challenge that would benefit from being addressed in future research.

As personal relationships are complex and there was only a small amount of variance explained in certain models of this study, future research should explore additional related variables to provide further contextual understanding. One important variable may be whether participants are living with the person for whom they complete the intimacy scale on. Living together may increase the degree of intimacy but also increases general exposure to negative symptoms and challenges that may personally affect the participant, which may build empathy or build stigma. Another aspect that was proposed in the original model was the impact of burden and stigma by association (SBA). As the definition and representation of the nuclear family have evolved, future research should explore this type of stigma within individuals as it may provide a

greater understanding of the effects on the relationship as a whole, regardless of relationship type. A measure such as the Stigma by Association Scale (Pryor et al., 2012) could be used to see the impacts and if it moderates or mediates the relationship. Ultimately, further research will expand our understanding of the nuances that exist and the potential effects on the development or mitigation of public stigma.

Limitations

The current study has several limitations. While this study had a large sample size ($n = 523$), it was a student sample and thus generalizability to a general population and diverse relationship types based on the Corrigan and Nieweglowski (2019) model were limited. The majority of our participants were young, white, cisgender women, furthering narrowing the generalizability of these findings to diverse populations. Furthermore, this study did not specifically capture or identify individuals from the healthcare field, which is a key component of the proposed U-shaped model. However, intimacy was measured in terms of a person with mental illness whom participants deemed closest to; this likely differs from healthcare provider intimacy and overall familiarity with patients. This highlights a challenge of capturing both personal and professional intimacy within a single measure, which currently does not exist. While the majority of participants were from the Health and Behavioural Science Faculty, which includes nurses and social workers students who may have experience in clinical settings (i.e., hospitals, inpatient care, etc.), this experience may have only had a limited influence on their public stigma at this stage of their training. As students, it is unlikely to have experienced the full strain of professional practice that leads to burnout that has been associated to public stigma (Henderson et al., 2014).

Additionally, while we were able to have a good representation of individuals from the nuclear family, information related to living together would have been beneficial for our understanding as discussed above. Future research to address this limitation should explore gathering a more generalized sample outside of a university setting. As the U-shaped model was suggested to capture a large understanding of familiarity and public stigma, this would require a larger and more representative sample from all areas and not just students.

Some methodological and statistical decisions also were made that could limit the results of this study. Since measuring familiarity in terms of intimacy is a novel aspect of this study, the MSIS measure was not specifically designed for stigma-focused studies. While it was selected due to its wide use, good reliability, and applicability to different relationship types, it may be limited in its ability to capture intimacy as it relates to stigma. We also modified this scale in order to include participants who did not know anyone with a mental illness. While the alpha level for the modified scale was reasonable, there is a point where internal consistency may become too high, which reflects unnecessary duplication (Streiner, 2003). Additionally, this did cause a clustering of scores at the lower end of the intimacy measure when exploring its relationship with the different outcome variables.

Another statistical limitation was identified when assessing the measures of internal consistency. Despite the MAKS and the CAMI-12 having acceptable alphas in previous research, internal consistency indicators including for the subscales were below the acceptable cut-off of .70 (Streiner, 2003). The inter-item correlations for the measures were generally small, which contributed to the lower overall alpha levels. This suggests that the items within each scale may not have consistently captured the intended construct, leading to potential measurement error and underestimation of the strength of the association between intimacy and public stigma.

Therefore, we interpret with caution for the analyses using the MAKES and CAMI-12. This may have occurred as our sample reported generally high scores with small standard deviations suggesting a relatively low variance among the scores. As participants were recruited from psychology courses, our sample may have had a relatively similar baseline knowledge and more positive attitudes towards resulting in a more similar response across items. Therefore, future research may address this limitation by using a more general population that have more variability in their knowledge, behaviours, and attitudes towards those with mental illness.

Implications

Despite the negative impact of public stigma and self-stigma, there is currently a limited grasp of the contextual understanding or underlying mechanisms of stigma (Ng et al., 2023). This study has provided a unique contribution to this area by exploring the construct of familiarity in terms of intimacy. While suggested to play a key role within the relationship between familiarity and public stigma (Corrigan & Nieweglowski, 2019; Ng et al., 2023), familiarity has only been explored in terms of the relationship type. Our findings provide new knowledge by using a continuous measure rather than a ranking-based measure, which may provide a more accurate representation of the impacts of closeness on public stigma.

The results from this study provides empirical support towards Allport's (1954) contact hypothesis in that those who have positive interpersonal contact in terms of intimacy showed lower levels of prejudice towards those with mental illness. Since participants identified a personal relationship, this may suggest that this type of relationship makes it easier to meet the four required conditions discussed in the theory which may make the positive impacts of the exposure more likely. Allport (1964) suggested that learning about the outgroup is a driving

factor for prejudice reduction, reduction of fear and anxiety, and increasing one's ability to empathize with individuals. Our findings are consistent with this theory.

This research also provides important information that may inform anti-stigma interventions. For example, the majority of our participants knew someone with mental illness. Since higher intimacy was associated with lower levels of public stigma, the pattern of findings supports contact-based anti-stigma interventions (Corrigan et al., 2012).

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Tables

Table 1

Distribution of Demographics

Demographics	<i>n</i>	Percentage
Sex		
Male	104	19.89%
Female	418	79.92%
Intersex	1	0.19%
Gender*		
Gender Fluid	2	0.38%
Man	108	20.65%
Women	402	76.86%
Queer	7	1.34%
Two-Spirit	3	0.57%
Other	5	0.96%
Prefer not to answer	2	0.38%
Ethnicity*		
African	46	8.80%
Black	24	4.59%
Caribbean	8	1.53%
East/Southeast Asian	26	4.97%
Indigenous	54	10.33%
Latinx	21	4.02%
Middle Eastern	10	1.91%
South Asian	41	7.84%
White	362	69.22%
Other	2	0.38%
Prefer not to answer	6	1.15%
Year of Study		
1	274	52.39%
2	114	21.80%
3	61	11.66%
4	59	11.28%
5+	8	1.53%
Prefer not to answer	7	1.34%
Marital Status		
Married, or in a domestic partnership	46	8.80%
Separated	5	0.96%
In a relationship	189	36.14%
Single	282	53.92%
Widowed	1	0.19%
Faculty		
Business Administration	11	2.10%

Education	49	9.37%
Engineering	7	1.34%
Health and Behavioural Sciences	361	69.02%
Science and Environment Studies	38	7.27%
Social Sciences and Humanities	49	9.37%
Other (ex. Interdisciplinary)	5	0.96%
Prefer not to answer	3	0.57%
Identify Mental Illness		
Yes	222	42.45%
No	276	53.77%
Prefer not to answer	24	4.59%
Missing	1	0.19%
Treatment for Mental Illness		
Yes	230	43.98%
No	283	54.11%
Prefer not to answer	8	1.53%
Missing	2	0.38%
Type of Treatment*		
Medication	149	28.49%
Counselling/Therapy	217	41.49%
Prefer not to answer	24	4.59%
Other	11	2.10%
Know Someone with a Mental Illness		
Yes	409	77.63%
No	97	18.55%
Prefer not to answer	17	3.25%
Have or Have Had a Mental Illness		
Yes	227	43.40%
No	260	49.71%
Prefer not to answer	34	6.50%
Missing	2	0.38%

Note. $n = 523$. *Participants were able to select more than one option. Therefore, the total responses may exceed the sample size and percentages may sum to more than 100%

Table 2*Pearson Correlations Among Study Variables*

	1	2	3	4
1. Intimacy				
2. MAKS	.37			
3. CAMI-12	.41	.47		
4. RIBS-IB	.48	.48	.51	
5. Self-Stigma	.38	.26	.25	.30

Note. $n = 523$

Table 3*Frequency of Reported Mental Illnesses Among Identified Individuals for the MSIS*

Mental Illness Category	<i>n</i>	Percentage
Mood Disorder	286	69.93%
Anxiety Disorder	253	61.86%
Personality Disorder	76	18.58%
Psychotic Disorder	34	8.31%
Eating Disorder	68	16.63%
Trauma-related Disorder	95	23.23%
Substance-related Disorder	63	15.40%
Obsessive-compulsive Disorder	61	14.91%
Neurodevelopmental	105	25.67%
Other	1	0.24%

Note. *n* = 409. Results include only participants who identified knowing someone with mental illness. Participants were able to select more than one option. Therefore, the total account may exceed the sample size.

Table 4*Cronbach's Alpha, Means, and Standard Deviations of All Variables*

	<i>n</i>	α	<i>M</i>	<i>SD</i>
MAKS	523	.55	44.12	4.57
CAMI-12	523	.48	46.65	4.78
RIBS-IB	523	.87	16.29	3.20
MSIS Original	523	.97	78.52	48.50
MSIS Modified	409	.92	100.4	28.40
SSMIS Total	227	.84	66.39	19.21
SSMIS Aware	227	.92	31.49	9.87
SSMIS Agree	227	.81	12.46	6.13
SSMIS Apply	227	.70	11.25	6.19
SSMIS Hurts Self	227	.80	11.19	7.48

Note. Descriptive statistics for the MSIS were calculated both with the full sample (MSIS Original) and with individuals who did not report knowing someone with a mental illness excluded (MSIS Modified).

Table 5*Pearson Correlations Between Public Stigma Variables and Self-Stigma Subscales*

Variable	SSMIS Total	Aware	Agree	Apply	Hurt Self
MAKS	-.09	.09	-.17*	-.12	-.10
CAMI-12	-.17*	.14*	-.40**	-.18*	-.13*
RIBS-IB	-.20*	.16*	-.45**	-.27**	-.13
Intimacy	-.13	.07	-.26**	-.18*	-.06

Note. $n = 227$. Results include only participants who identified as having or have had a mental illness. * $p < .05$. ** $p < .001$.

Table 6*Linear Regressions Predicting SSMIS Subscales from Public Stigma*

	B	β	t	p	R ²
MAKS					
Aware	0.20	.09	1.31	.19	.01
Agree	-0.24	-.17	-2.54	.01*	.03
Apply	-0.18	-.12	-1.87	.06	.02
Hurt	-0.17	-.10	-1.48	.14	.01
CAMI-12					
Aware	0.33	.14	2.12	.04*	.02
Agree	-0.59	-.40	-6.48	< .001**	.18
Apply	-0.23	-.18	-2.81	.005*	.03
Hurt	-0.24	-.13	-2.03	.04*	.02
RIBS-IB					
Aware	0.58	.16	2.44	.02*	.03
Agree	-1.02	-.45	-7.59	< .001**	.20
Apply	-0.63	-.27	-4.27	< .001**	.08
Hurt	-0.35	-.13	-1.90	.06	.16

Note. $n = 227$, Results include only participants who identified as having lived experience of mental illness.

* $p < .05$. ** $p < .001$.

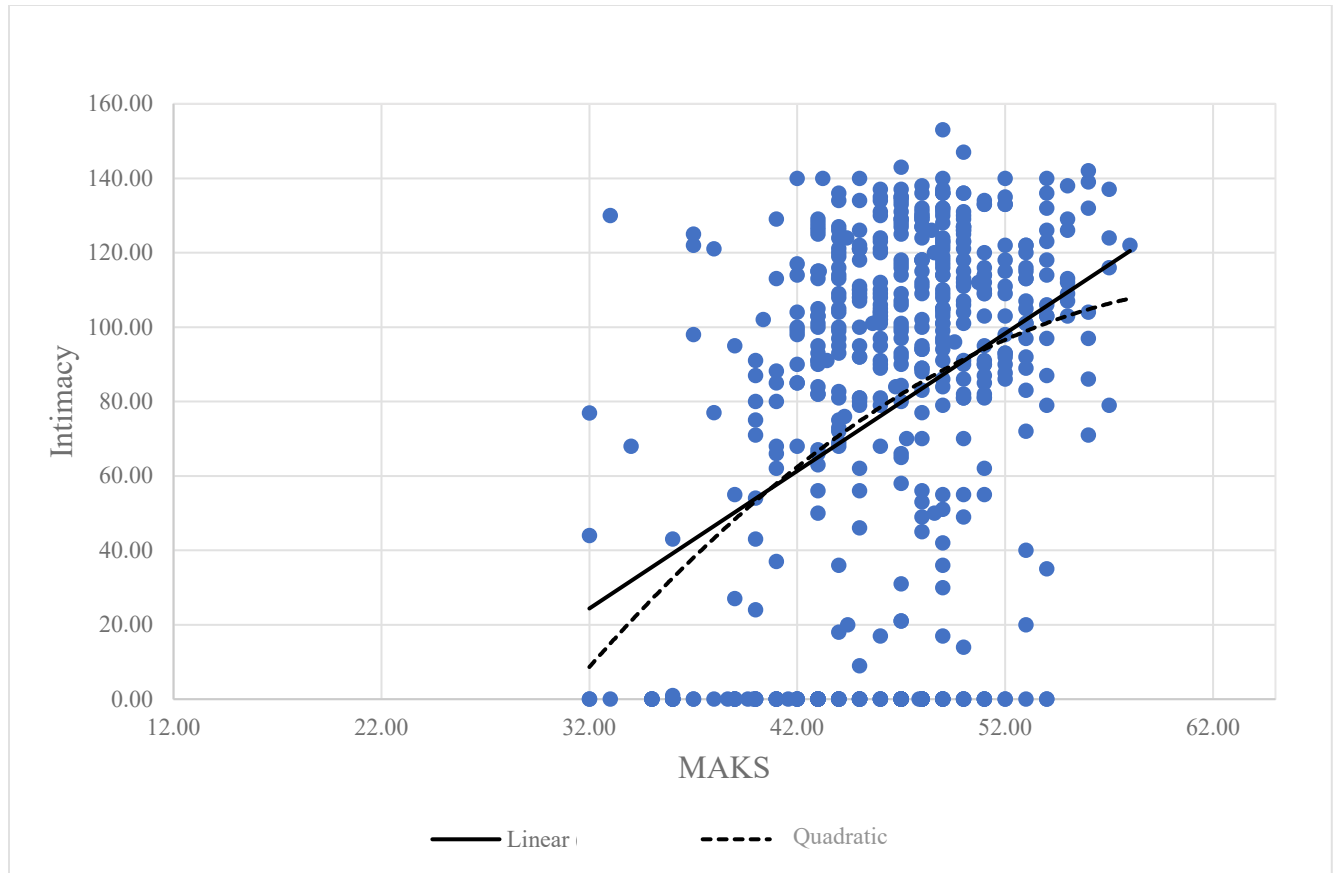
Table 7*Descriptive Statistics of Public Stigma Measures Based on Personal Mental Illness*

Have or have had mental illness?	MAKS			CAMI-12		RIBS-IB	
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Yes	227	48.31**	4.30	45.75**	4.11	17.62**	2.70
No	260	45.29	4.84	42.71	4.49	15.16	3.20
Prefer not to answer	34	46.11	4.04	44.14	4.55	16.18	2.96

Note. ** Statistically significant difference between the no group at $p < .001$.

Figures**Figure 1**

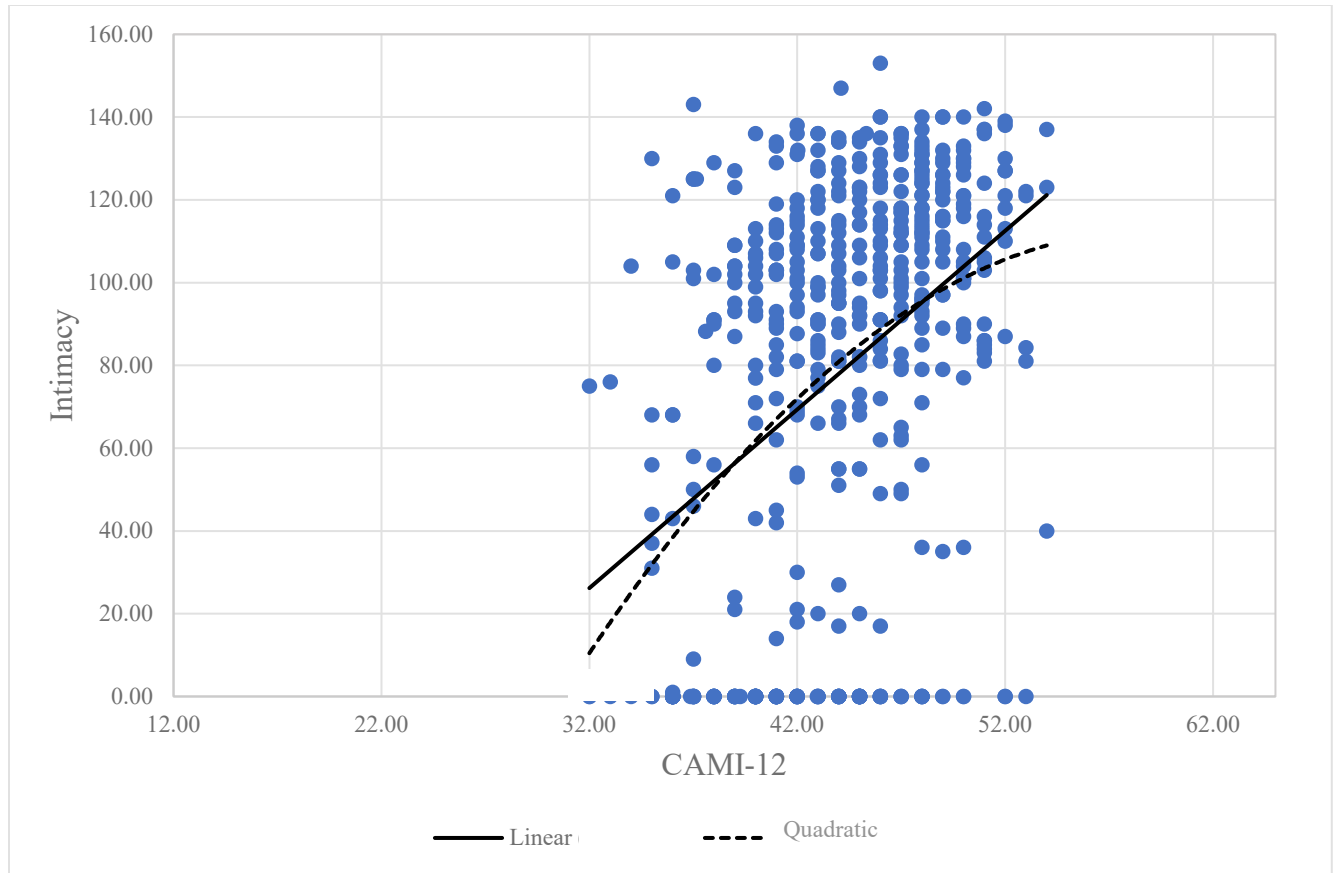
Relationship between Intimacy and MAKS with Linear and Quadratic Fit Lines



Note. $n = 523$

Figure 2

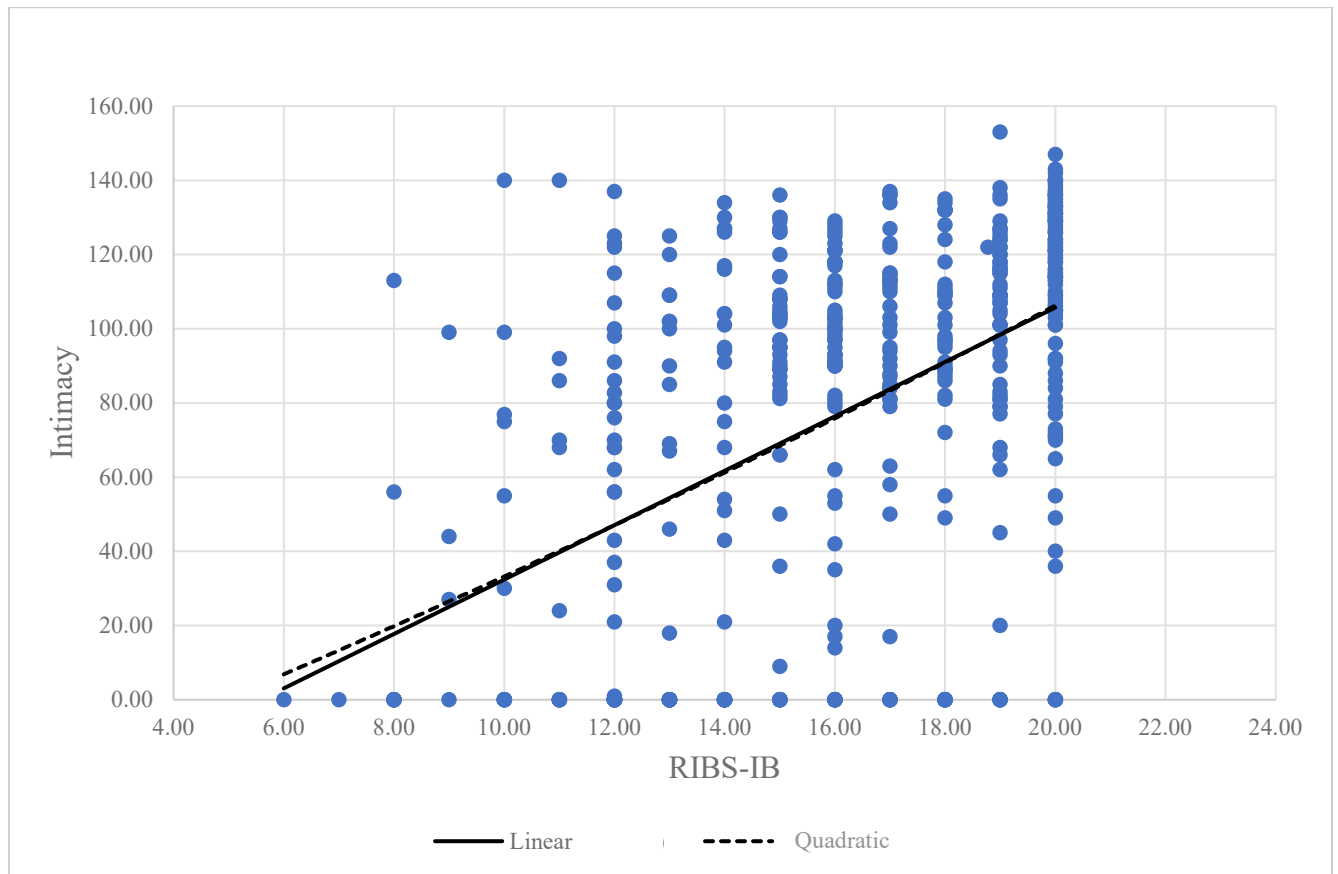
Relationship between Intimacy and CAMI-12 with Linear and Quadratic Fit Lines



Note. $n = 523$

Figure 3

Relationship between Intimacy and RIBS-IB with Linear and Quadratic Fit Lines



Note. $n = 523$

Appendix A: Miller Social Intimacy Score (MSIS; Miller & Lefcourt, 1982)

While thinking of the individual identified that you know with a mental illness, please answer the following questions regarding your relationship with them:

	Very Rarely			Some of the time			Almost Always			
1. When you have leisure time how often do you choose to spend it with them alone?	1	2	3	4	5	6	7	8	9	10
2. How often do you keep very personal information to yourself and do not share it with them?	1	2	3	4	5	6	7	8	9	10
3. How often do you show them affection?	1	2	3	4	5	6	7	8	9	10
4. How often do you confide very personal information to them?	1	2	3	4	5	6	7	8	9	10
5. How often are you able to understand their feelings?	1	2	3	4	5	6	7	8	9	10
6. How often do you feel close to them?	1	2	3	4	5	6	7	8	9	10
	Not Much			A Little			A Great Deal			
7. How much do you like to spend time alone with them?	1	2	3	4	5	6	7	8	9	10
8. How much do you feel like being encouraging and supportive to them when they're unhappy?	1	2	3	4	5	6	7	8	9	10
9. How close do you feel to them most of the time?	1	2	3	4	5	6	7	8	9	10
10. How important is it to you to listen to their very personal disclosures?	1	2	3	4	5	6	7	8	9	10
11. How satisfying is your relationship with them?	1	2	3	4	5	6	7	8	9	10
12. How affectionate do you feel towards them?	1	2	3	4	5	6	7	8	9	10
13. How important is it to you that they understand your feelings?	1	2	3	4	5	6	7	8	9	10
14. How much damage is caused by a typical disagreement in your relationship with them?	1	2	3	4	5	6	7	8	9	10
15. How important is it to you that they be encouraging and supportive to you when you are unhappy?	1	2	3	4	5	6	7	8	9	10
16. How important is it to you the they show you affection?	1	2	3	4	5	6	7	8	9	10
17. How important is your relationship with them in your life?	1	2	3	4	5	6	7	8	9	10

Appendix B: Mental Health Knowledge Schedule (MAKS; Evans-Lacko et al., 2010)

Instructions: For each statement below, respond by selecting one box only. Mental health problems here refer, for example, to conditions for which an individual would be seen by healthcare staff.

1. Most people with mental health problems want to have paid employment

1	2	3	4	5
Disagree Strongly	Disagree Slightly	Neither Agree Nor Disagree	Agree Slightly	Agree Strongly

2. If a friend had a mental health problem, I know what advice to give them to get professional help.

1	2	3	4	5
Disagree Strongly	Disagree Slightly	Neither Agree Nor Disagree	Agree Slightly	Agree Strongly

3. Medication can be an effective treatment for people with mental health problems.

1	2	3	4	5
Disagree Strongly	Disagree Slightly	Neither Agree Nor Disagree	Agree Slightly	Agree Strongly

4. Psychotherapy (e.g., talking therapy or counseling) can be an effective treatment for people with mental health problems.

1	2	3	4	5
Disagree Strongly	Disagree Slightly	Neither Agree Nor Disagree	Agree Slightly	Agree Strongly

5. People with severe mental health problems can fully recover

1	2	3	4	5
Disagree Strongly	Disagree Slightly	Neither Agree Nor Disagree	Agree Slightly	Agree Strongly

6. Most people with mental health problems go to a health care professional to get help.

1	2	3	4	5
Disagree Strongly	Disagree Slightly	Neither Agree Nor Disagree	Agree Slightly	Agree Strongly

Instructions: Say whether you think each condition is a type of mental illness by selecting on answer only.

7. Depression

1	2	3	4	5
Disagree Strongly	Disagree Slightly	Neither Agree Nor Disagree	Agree Slightly	Agree Strongly

8. Stress

1	2	3	4	5
Disagree Strongly	Disagree Slightly	Neither Agree Nor Disagree	Agree Slightly	Agree Strongly

9. Schizophrenia

1	2	3	4	5
Disagree Strongly	Disagree Slightly	Neither Agree Nor Disagree	Agree Slightly	Agree Strongly

10. Bipolar disorder (manic-depression)

1	2	3	4	5
Disagree Strongly	Disagree Slightly	Neither Agree Nor Disagree	Agree Slightly	Agree Strongly

11. Drug addiction

1	2	3	4	5
Disagree Strongly	Disagree Slightly	Neither Agree Nor Disagree	Agree Slightly	Agree Strongly

12. Grief

1	2	3	4	5
Disagree Strongly	Disagree Slightly	Neither Agree Nor Disagree	Agree Slightly	Agree Strongly

**Appendix C: Community Attitudes Towards the Mentally Ill Scale
(CAMI-12; Ilic et al., 2014)**

Please read each statement carefully and select the option that best describes your level of agreement with each statement.

13. One of the main causes of mental illness is a lack of self-discipline and will-power

1	2	3	4	5
Disagree Strongly	Disagree Slightly	Neither Agree Nor Disagree	Agree Slightly	Agree Strongly

14. There is something about people with mental illness that makes it easy to tell them from Normal people

1	2	3	4	5
Disagree Strongly	Disagree Slightly	Neither Agree Nor Disagree	Agree Slightly	Agree Strongly

15. We need to adopt a far more tolerant attitude toward people with mental illness in our society

1	2	3	4	5
Disagree Strongly	Disagree Slightly	Neither Agree Nor Disagree	Agree Slightly	Agree Strongly

16. People with mental illness don't deserve our sympathy

1	2	3	4	5
Disagree Strongly	Disagree Slightly	Neither Agree Nor Disagree	Agree Slightly	Agree Strongly

17. I would not want to live next door to someone who has been mentally ill

1	2	3	4	5
Disagree Strongly	Disagree Slightly	Neither Agree Nor Disagree	Agree Slightly	Agree Strongly

18. It is frightening to think of people with mental problems living in residential neighbourhoods

1	2	3	4	5
Disagree Strongly	Disagree Slightly	Neither Agree Nor Disagree	Agree Slightly	Agree Strongly

19. Mental illness is an illness like any other

1	2	3	4	5
Disagree Strongly	Disagree Slightly	Neither Agree Nor Disagree	Agree Slightly	Agree Strongly

20. Virtually anyone can become mentally ill

1	2	3	4	5
Disagree Strongly	Disagree Slightly	Neither Agree Nor Disagree	Agree Slightly	Agree Strongly

21. The best therapy for many people with mental illness is to be part of a Normal community

1	2	3	4	5
Disagree Strongly	Disagree Slightly	Neither Agree Nor Disagree	Agree Slightly	Agree Strongly

22. People with mental health problems are far less of a danger than most people suppose

1	2	3	4	5
Disagree Strongly	Disagree Slightly	Neither Agree Nor Disagree	Agree Slightly	Agree Strongly

23. People with mental health problems should not be given any responsibility

1	2	3	4	5
Disagree Strongly	Disagree Slightly	Neither Agree Nor Disagree	Agree Slightly	Agree Strongly

24. Most women who were once patients in a mental hospital can be trusted as babysitters

1	2	3	4	5
Disagree Strongly	Disagree Slightly	Neither Agree Nor Disagree	Agree Slightly	Agree Strongly

**Appendix D: Reported and Intended Behaviour Scale – Intended Behaviours Subscale
(RIBS-IB; Evans-Lacko et al., 2011)**

For each of the questions, please the response that best fits your opinion

1. In the future, I would be willing to live with someone with a mental health problem

1	2	3	4	5
Disagree Strongly	Disagree Slightly	Neither Agree Nor Disagree	Agree Slightly	Agree Strongly

2. In the future, I would be willing to work with someone with a mental health problem

1	2	3	4	5
Disagree Strongly	Disagree Slightly	Neither Agree Nor Disagree	Agree Slightly	Agree Strongly

3. In the future, I would be willing to live nearby to someone with a mental health problem

1	2	3	4	5
Disagree Strongly	Disagree Slightly	Neither Agree Nor Disagree	Agree Slightly	Agree Strongly

4. In the future, I would be willing to continue a relationship with a friend who developed a mental health problem

1	2	3	4	5
Disagree Strongly	Disagree Slightly	Neither Agree Nor Disagree	Agree Slightly	Agree Strongly

Appendix E: Self-Stigma of Mental Illness Scale – Short Form (SSMIS-SF; Corrigan et al., 2012)

Name or ID Number _____ Date _____

The public has believed many different things about persons with serious mental illnesses over the years, including some things that could be considered offensive. We would like to know what you think most of the public as a whole, or most people in general, believe about persons with serious mental illnesses at the present time. Please answer the following items using the 9-point scale below.

I strongly disagree			Neither agree nor disagree			I strongly agree		
1	2	3	4	5	6	7	8	9

Section 1:

I think the public believes...

1. _____ most persons with mental illness are to blame for their problems.
2. _____ most persons with mental illness are unpredictable.
3. _____ most persons with mental illness will not recover or get better.
4. _____ most persons with mental illness are dangerous.
5. _____ most persons with mental illness are unable to take care of themselves.

Section 2:

Now answer the next 5 items using the agreement scale.

I strongly disagree			Neither agree nor disagree			I strongly agree		
1	2	3	4	5	6	7	8	9

I think...

1. _____ most persons with mental illness are to blame for their problems.
2. _____ most persons with mental illness are unpredictable.
3. _____ most persons with mental illness will not recover or get better.
4. _____ most persons with mental illness are dangerous.
5. _____ most persons with mental illness are unable to take care of themselves.

Section 3

Now answer the next 5 items using the agreement scale.

I strongly disagree			Neither agree nor disagree			I strongly agree		
1	2	3	4	5	6	7	8	9

Because I have a mental illness...

1. _____ I am unable to take care of myself.
2. _____ I will not recover or get better.
3. _____ I am to blame for my problems.
4. _____ I am unpredictable.
5. _____ I am dangerous.

Section 4

Finally, answer the next 5 items using the agreement scale.

I strongly disagree			Neither agree nor disagree			I strongly agree		
1	2	3	4	5	6	7	8	9

I currently respect myself less...

1. _____ because I am unable to take care of myself.
2. _____ because I am dangerous.
3. _____ because I am to blame for my problems.
4. _____ because I will not recover or get better.
5. _____ because I am unpredictable.

Appendix F: Self-Stigma of Mental Illness Scale – Short Form Score Sheet (Corrigan et al., 2012)

Name or ID Number _____ Date _____

Summing items from each section represents the 3 A's plus 1.

_____ Aware: (Sum all items from Section 1).

_____ Agree: (Sum all items from Section 2).

_____ Apply: (Sum all items from Section 3).

_____ Hurts self: (Sum all items from Section 4).

Appendix G: Demographic Questionnaire

Please provide the following information about yourself:

1. What is your current age? _____

2. What was your sex assigned at birth?

☐ Male ☐ Female ☐ Intersex ☐ Prefer not to Answer

3. What options best describe your gender? (*Select all that apply*)

Gender Fluid Man Non-Binary Prefer not to answer Queer Two-spirit
Woman

4. How do you describe your racial, ethnic and/or cultural background? Please check all that apply.

- ☐ African (e.g., Ghana, Nigeria)
- ☐ Black
- ☐ Caribbean (e.g., Jamaica, Trinidad and Tobago, Guyana, St. Lucia)
- ☐ East/Southeast Asian (e.g., Chinese, Korean, Japanese, Taiwanese, Filipino, Vietnamese, Cambodian, Thai, Malaysian, Indonesian, etc.)
- ☐ Indigenous (e.g., First Nations, Métis, Inuit, etc.)
- ☐ Latinx (e.g., Latin American, Hispanic, etc.)
- ☐ Middle Eastern (e.g., Arab, Persian, Afghan, Egyptian, Iranian, Lebanese, Turkish, Kurdish, etc.)
- ☐ South Asian (e.g., East Indian, Pakistani, Bangladeshi, Sri Lankan, etc.)
- ☐ White (e.g., European decent)
- ☐ I use other terms to describe my racial, ethnic, and/or cultural background: Please specify _____
- ☐ Prefer not to answer

5. What is your marital status?

☐ Married, or in a domestic partnership

- ☐ Divorced
- ☐ Separated
- ☐ In a relationship
- ☐ Single
- ☐ Widowed

6. What is your year of study? _____

7. What is the name of your major/program? _____

8. Do you identify as someone who has a mental illness?

- ☐ Yes ☐ No ☐ Prefer not to Answer

9. Have you ever received treatment related to your mental health?

- ☐ Yes ☐ No ☐ Prefer not to Answer

a. If yes, which types of treatment?

- ☐ Medication
- ☐ Counselling/Therapy
- ☐ Other (Please specify _____)
- ☐ Prefer not to Answer

10. Do you know someone in your life that has or has had a diagnosed mental illness?

- ☐ Yes ☐ No ☐ Prefer not to Answer

a. If yes, please identify the type of relationship (i.e., mother, friend, coworkers) you have with this individual? If you know multiple, please select the individual that you feel closest to. _____

11. To your best knowledge, which category best fits the mental illness of the individual identified? Please select all that apply

- ☐ Mood Disorder (depression, bipolar disorder, etc.)
- ☐ Anxiety Disorder (general anxiety disorder, panic disorder, etc.)
- ☐ Personality Disorder (borderline personality disorder, narcissistic personality disorder,

etc.)

- ☐ Psychotic Disorder (schizophrenia, schizoaffective disorder, etc.)
- ☐ Eating Disorder (anorexia, bulimia, etc.)
- ☐ Trauma-related Disorder (post-traumatic stress disorder, adjustment disorder, etc.)
- ☐ Substance-related Disorder (substance abuse disorder, gambling disorder)
- ☐ Obsessive-compulsive Disorder (OCD, body dysmorphic disorder, etc.)
- ☐ Neurodevelopmental Disorder (autism, ADHD, etc.)
- ☐ Other (please specify) _____

12. Do you have or have had a mental illness?

- ☐ Yes ☐ No ☐ Prefer not to Answer

Appendix H: Supplementary Hierarchical Regression Analysis

Table A1

Supplementary Hierarchical Regression Predicting MAKs from Intimacy

Variable	Predictor	B	95% CL		SE	β	F	R ²	Adj. R ²	ΔR^2	ΔF
			LL	UL							
Step 1	Constant	49.81	48.71	50.92	0.56		20.28**	.05	.05	.05	20.28**
	MI	-1.54	-2.21	-0.87	0.34	-.22**					
Step 2	Constant	46.38	44.40	48.36	1.01		18.82**	.09	.08	.04	16.58**
	MI	-1.30	-1.97	-0.63	0.34	-.18**					
	Intimacy	0.30	0.16	0.05	0.01	.20**					
Step 3	Constant	46.58	43.49	49.68	1.58		12.53**	.08	.08	.00	0.03
	MI	-1.29	-1.96	-0.63	0.34	-.18**					
	Intimacy	0.03	-0.04	0.09	0.03	.16					
	Intimacy ²	0.00003	0.00	0.00	0.00	.04					

Note. $n = 407$. Results include only participants who identified knowing someone with mental illness. MI = Mental Illness. Intimacy² refers to the quadratic term of the intimacy variable.

* $p < .05$. ** $p < .001$.

Table A2*Supplementary Hierarchical Regression Predicting CAMI-12 from Intimacy*

Variable	Predictor	B	95% CL		SE	β	F	R ²	Adj. R ²	ΔR^2	ΔF
			LL	UL							
Step 1	Constant	47.06	45.98	48.15	0.55		17.78**	.04	.04	.04	17.78**
	MI	-1.41	-2.06	-0.75	0.33	-.21**					
Step 2	Constant	42.19	40.29	44.08	0.96		27.98**	.12	.12	.08	36.63**
	MI	-1.07	-1.71	-0.43	0.33	-.16*					
	Intimacy	0.04	0.03	0.06	0.01	.29**					
Step 3	Constant	42.09	39.12	45.05	1.51		18.61**	.12	.12	.00	0.01
	MI	-1.07	-1.71	-0.43	0.33	-.16*					
	Intimacy	0.05	-0.02	0.11	0.03	.31					
	Intimacy ²	-0.00001	0.00	0.00	0.00	-.02					

Note. $n = 407$. Results include only participants who identified knowing someone with mental illness. MI = Mental Illness. Intimacy² refers to the quadratic term of the intimacy variable.

* $p < .05$. ** $p < .001$.

Table A3*Supplementary Hierarchical Regression Predicting RIBS-IB from Intimacy*

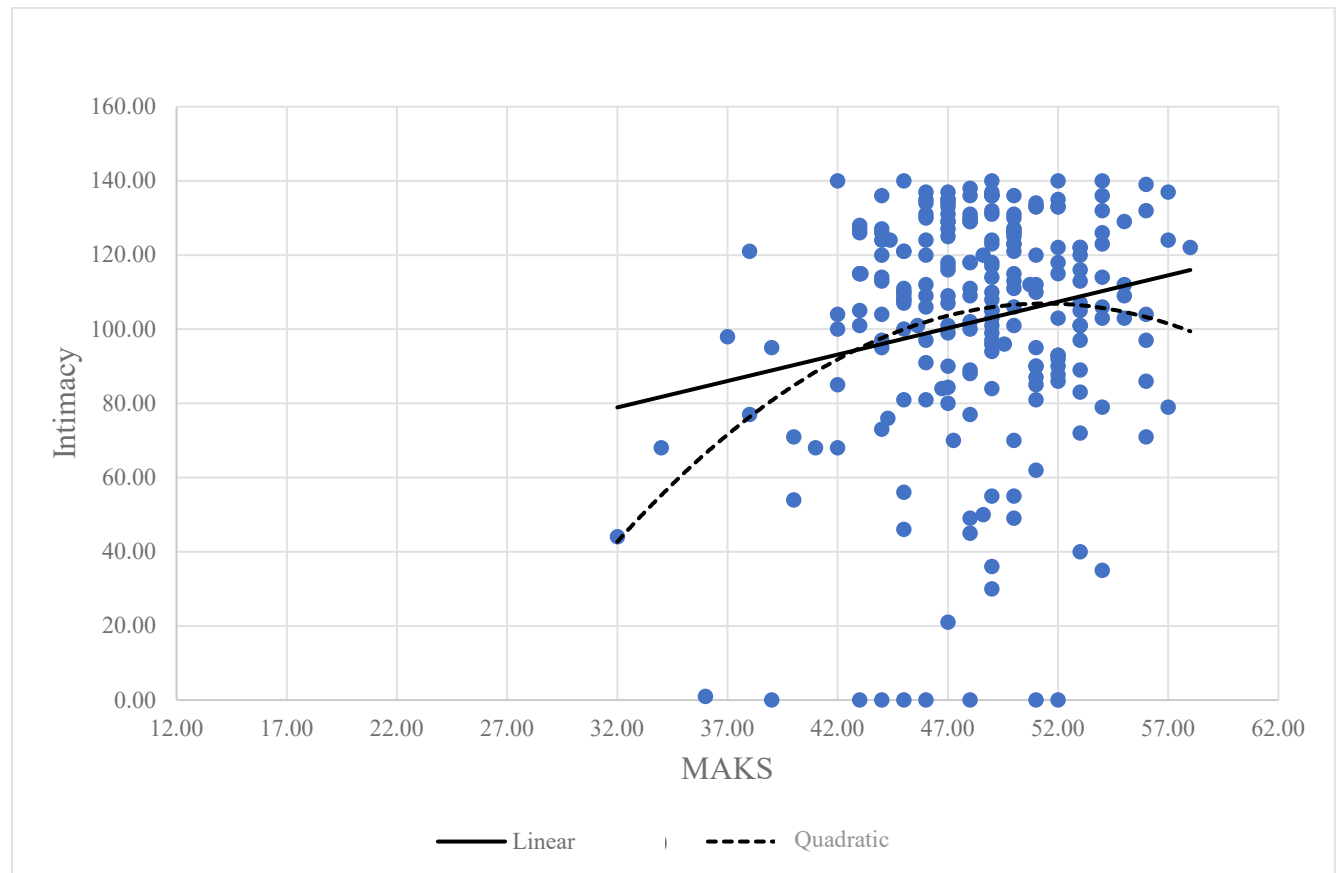
Variable	Predictor	B	95% CL		SE	β	F	R ²	Adj. R ²	ΔR^2	ΔF
			LL	UL							
Step 1	Constant	18.86	17.96	19.40	0.55		26.30**	.06	.06	.06	26.30**
	MI	-1.14	-1.57	-0.70	0.33	-.25**					
Step 2	Constant	14.71	13.48	15.94	0.96		43.97**	.18	.18	.12	57.95**
	MI	-0.86	-1.27	-0.45	0.33	-.19*					
	Intimacy	0.04	0.03	0.04	0.01	.35**					
Step 3	Constant	15.34	13.52	17.26	1.51		29.53**	.18	.17	.00	0.71
	MI	-0.85	-1.27	-0.44	0.33	-.19*					
	Intimacy	0.02	-0.02	0.06	0.03	.18					
	Intimacy ²	0.00009	0.00	0.00	0.00	-.18					

Note. $n = 407$. Results include only participants who identified knowing someone with mental illness. MI = Mental Illness. Intimacy² refers to the quadratic term of the intimacy variable.

* $p < .05$. ** $p < .001$

Appendix I: Supplemental Scatterplots for Hierarchical Regression**Figure 1a**

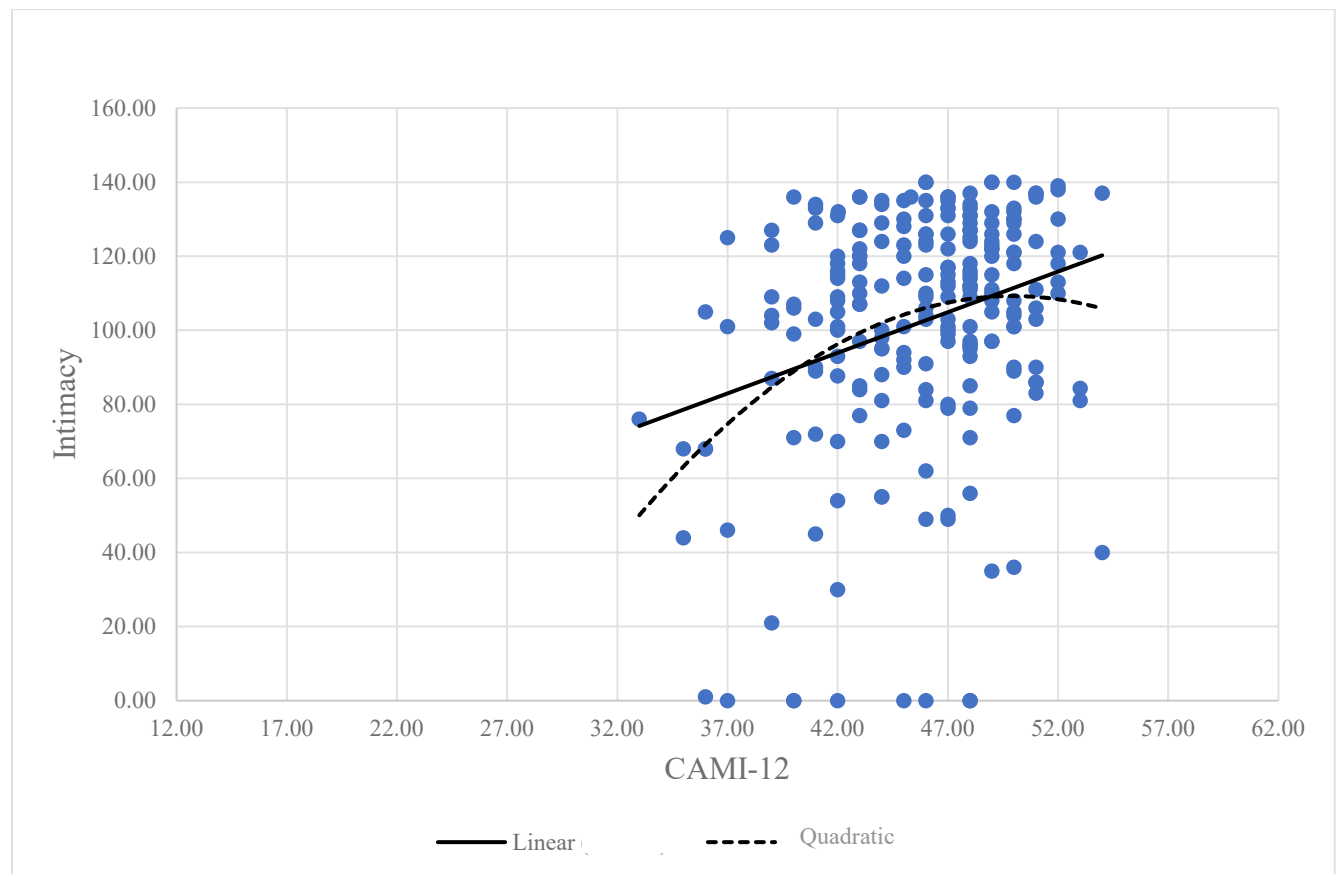
Supplementary Scatterplots of the Relationship between Intimacy and MAKS



Note. $n = 409$. Results include only participants who identified knowing someone with mental illness.

Figure 1b

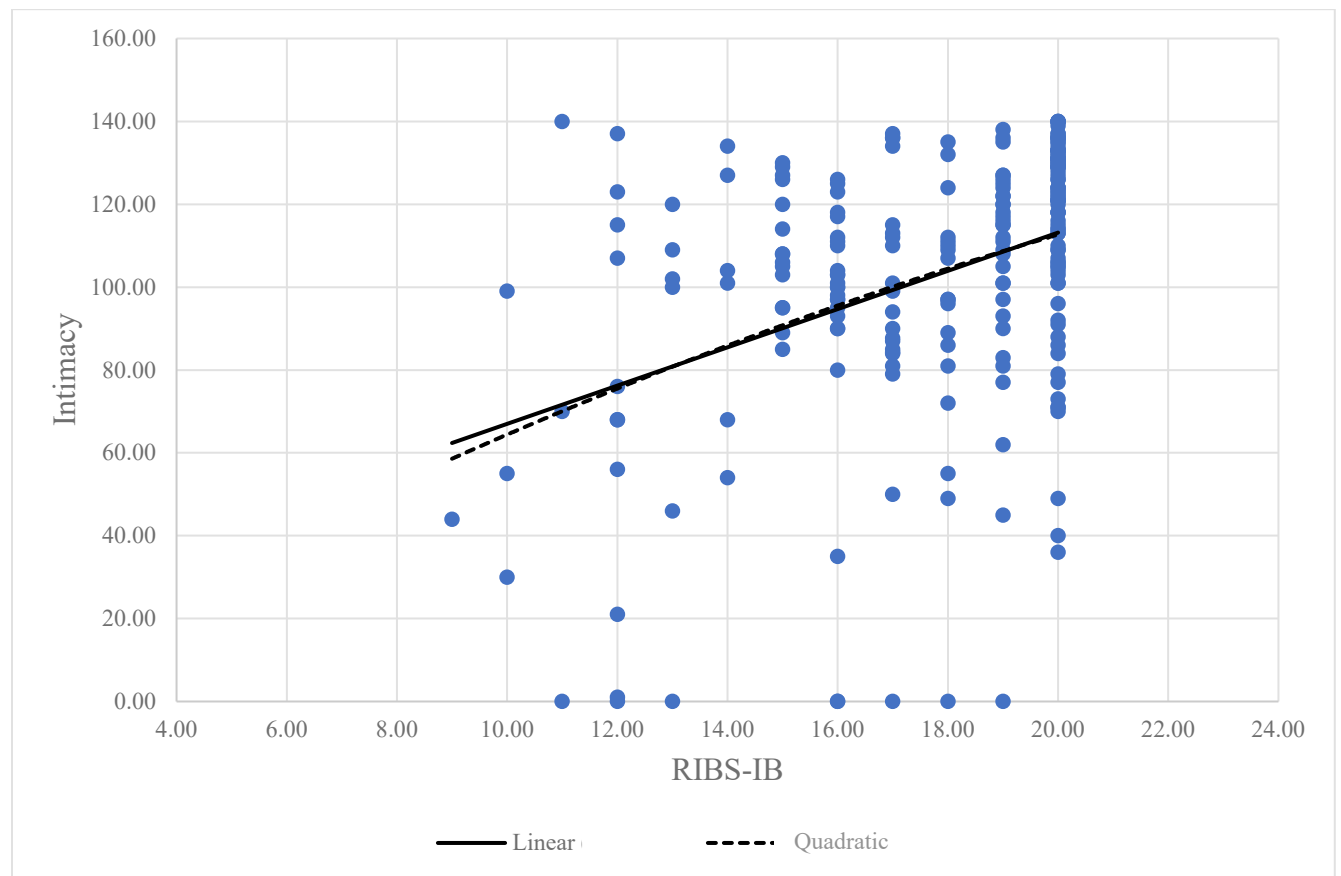
Supplementary Scatterplots of the Relationship between Intimacy and CAMI-12



Note. $n = 409$. Results include only participants who identified knowing someone with mental illness.

Figure 1c

Supplementary Scatterplots of the Relationship between Intimacy and RIBS-IB



Note. $n = 409$. Results include only participants who identified knowing someone with mental illness.