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Relationships Between Age, Gender, Familiarity with Mental Illness, Openness, and

Empathy Toward Individuals with Mental Illness

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Abstract

Empathy is a fundamental component in social cognition and prosocial behaviour (Sommerlad et al., 2021). The aim in this study was to investigate the relationships between empathy toward individuals with mental illness and age, gender, familiarity with mental illness, and openness. Specifically, four hypotheses were tested: (1) Empathy toward individuals with mental illness will be related to age, with higher empathy noted in the youth and young adult age groups compared to older adults; (2) empathy toward individuals with mental illness will be related to gender, with females showing higher empathy than males; (3) empathy toward individuals with mental illness will be positively related to familiarity with mental illness; and (4) empathy toward individuals with mental illness will be positively related to openness. To test these hypotheses, a variety of questionnaires were used to measure participants' empathy levels toward mentally ill individuals, familiarity with mental illness, the personality trait of openness, and demographic variables including age and gender. Using Pearson correlations and one-way ANOVAs, significant positive relationships were found between empathy toward individuals with mental illness and the constructs of gender and familiarity. A significant negative relationship was found between empathy toward individuals with mental illness and openness. Results concerning the relationship between empathy toward individuals with mental illness and age were inconclusive. Findings from this study can be intentionally directed toward creating an informed world which provides equal opportunity for all individuals.

Keywords. Empathy, stigma, mental illness, age, gender, openness, familiarity

Relationships Between Age, Gender, Openness, Familiarity with Mental Illness, and

Empathy Toward Individuals with Mental Illness

The topic of mental illness perception in relation to stigma and discrimination has

become one of increasing popularity though the past few decades (Catalano et al., 2021;

Corrigan & Nieweglowki, 2019; Dupont-Reyes et al., 2020; Ferrie et al., 2020; Klik et al., 2019;

O'Driscoll et al., 2012). However, little research has been done to investigate the relationship

between empathy toward individuals with mental illness and age groups. This study explores

empathy toward individuals with mental illness across different age groups and genders, as well

as familiarity with, and openness to, mentally ill people. This study explores the research

question, "How do the factors of age, gender, familiarity with mental illness, and openness

influence one's level of empathy toward individuals with mental illness?"

Empathy

Empathy, the emotional ability to feel compassion toward another's experience, and/or

the cognitive ability to understand another's perspective as if it were your own, is a fundamental

component in social cognition and prosocial behaviour (Sommerlad et al., 2021). It has been

noted that higher empathy is associated with greater life satisfaction and lower rates of

depression and loneliness (Sommerlad et al., 2021).

Several theories have been proposed concerning the development and the origin of the

empathic trait (Dorris et al., 2022; Pinto et al., 2012; Potash et al., 2013). Firstly, research is

increasing regarding empathy's biological basis. Brain regions, such as the medial prefrontal

cortex, the superior temporal sulcus, the temporoparietal junction, and the bilateral temporal

lobes, have been identified by neuroimaging as activated areas in empathetic situations (Dorris et

al., 2022). Attribution theory claims a cognitive-emotional process of behaviour, that "persons

make attributions about the cause and controllability of a person's illness that lead to inferences about responsibility" (Corrigan et al., 2003, p. 165). This theory also has applications to the development of empathy toward individuals with mental illness, asserting that "people respond to another's health condition in a negative manner if they believe the individual has a high degree of responsibility and control over the health condition" (Pinto et al., 2012, p. 2). Therefore, a person's level of empathic response is related to how much responsibility or "fault" they believe the affected individual to have over their illness; someone with a high-responsibility perspective will often express frustration, annoyance, and avoidance, while someone with a low-responsibility perspective will likely offer support and feel pity (Pinto et al., 2012). A third perspective, offered and explored by Dorris et al. (2022) on the development of empathy toward individuals with mental illness, emerges from developmental psychology. Evidence suggests that the children of mothers who clearly communicate their thoughts, intentions, and emotions are advantaged in the recognition of the emotional states of others. Additionally, empathy development is positively influenced by pretend play, reading storybooks, and hearing about others' past experiences (Dorris et al., 2022). Finally, research carried out by Potash et al. (2013) highlighted a negative correlation between anxiety and empathy. Generally, more anxious individuals are less empathetic as they often distance themselves from others or focus on their own emotional needs.

Impacts of Age on Empathy

   Investigations into the impact of the ageing process on empathy toward individuals who suffer from mental illness have been quite inconclusive as indicated by differing findings of Wahl (2002) and Dorris et al. (2022). In his research, Wahl (2002) observed an increase in stigmatisation toward mental illness as individuals age. Alternatively, Dorris et al. (2022) noted

that ageing, particularly "healthy ageing," is associated with improved emotional well-being and prosocial behaviour across the lifespan. These researchers concluded from their studies that "cognitive empathy improves across childhood, declines slightly in adolescence, [improves] in early adulthood remaining stable until the late middle age and then declines, with a particularly steep decline in males over the age of 75 years" (p. 1530).

Interestingly, Dorris et al. (2022) found more conclusive results surrounding the impact of one's current age on one's empathy capabilities. Cognitive empathy results have revealed the lowest scores for individuals under the age of 18 and over the age of 75. However, these researchers also found a further decline in adolescents compared to children ages 10-12. Compared with children, adolescents have been noted to be more judgemental and less inclusive toward age-matched individuals with mental illness, while adolescents report more fear and more social exclusion toward these peers (Dorris et al., 2022). In contrast, increased empathy scores have been observed by O'Driscoll et al. (2012) as individuals enter into the 13-18 year age group and the 19-25 year age group, suggesting that adolescence and young adulthood are critical in the development of empathic maturity. Upon reaching mature adulthood, this bell curve begins its decline throughout older age. Dorris et al.'s study observed a particularly significant empathic decline in older males, to the extent that their scores fell lower than those of children aged less than six years (Dorris et al., 2022).

Impacts of Gender on Empathy

Previous studies have presented several findings concerning the relationship between gender and empathy (Dupont-Reyes et al., 2020; O'Driscoll et al., 2012; Dorris et al., 2022). Du-Pont-Reyes et al. (2020) found that there are more stigmatising attitudes, less empathy, and higher rates of peer rejection toward those with mental illness noted in males. In addition, they

reported that males, more often than females, perceive those affected by mental illnesses as responsible for their conditions. According to O'Driscoll et al., ostracism may be more prevalent between males than between females, as they commonly consider peer rejection as being more acceptable. One implication for a male lacking in empathy skills, according to Dorris et al. (2022), is that he might feel greater frustration or confusion in interpersonal relationships where empathy is expected.

Alternatively, women have consistently scored higher than men on empathy scales (Sommerlad et al., 2021), and, at all ages, have scored higher in theory of mind abilities (Dorris et al., 2022). Dorris et al. (2022) defines the term "theory of mind" as the "awareness that others have a mind with mental states, information, and motivations that may differ from one's own" (p. 1524). Sommerlad et al. (2021) suggest three potential causes of these advanced abilities in females: socialisation, biology and genetics, and social desirability bias. Firstly, culture-specific socialisation and social learning may drive gender behaviour differences, such as the expectation for women to be motherly and nurturing and the expectation for men to show little to no emotion. Secondly, biology and genetics may provide the answer through hormonal influences, specifically differences based on oxytocin levels or testosterone levels between the sexes. Thirdly, social desirability bias, the tendency to respond to questions in a way which will be received more favourably, may impact females' self-report results as they commonly overreport their own empathy to satisfy social expectations.

Impacts of Familiarity on Empathy

People gain familiarity with mental illness through media exposure, relational exposure, personal experience, or a combination of these factors. The more intimately one experiences and interacts with individuals with mental illness, the greater their empathetic intensity for mentally

ill individuals as a group (Corrigan & Nieweglowski, 2019; Corrigan et al., 2001). A positive correlation between familiarity with, and empathy toward, individuals with mental illness has been studied by researchers such as Corrigan et al. (2001). These researchers observed a decreased likelihood that those who are familiar with mental illness would endorse stigmatised or prejudicial attitudes toward mentally ill individuals. Because there seems to be a correlation between increased knowledge and understanding of mental illness and decreased stigmatising attitudes, this finding highlights the need for more mental health advocacy and education to reduce prejudice. The researchers suggested that "prejudicial attitudes have direct influence on discriminatory behaviour" (p. 224).

Impacts of Openness on Empathy

As indicated by Caligiuri et al. (2000), the popular and all-encompassing five-factor model of personality, known as the "Big-Five," was originally established in 1949 by D.W. Fiske, assessing the personality factors of extroversion, agreeableness, conscientiousness, emotional stability, and openness. This study incorporated Fiske's trait of openness in relation to its impact on acceptance of individuals with mental illness. The characteristic of openness is what ultimately helps facilitate the acceptance of diversity and moderates the rigidity of one's view of what is acceptable and unacceptable (Caliguiri et al., 2000). It is characteristic of individuals who are eager to expand and examine their experiences, are creative, have deep emotional reactions, and readily accept new ways of doing tasks (McCrae & Costa, 1997; McCrae & Costa, 1985; Widiger, 2015). In contrast, closed individuals struggle to try new things or consider alternative perspectives from their own (Widiger, 2015).

Caligiuri et al. (2000) have noted that "those who are less open view their ideas, norms, and behaviour patterns as correct and others as incorrect... and will make little effort to

understand people from other cultures and backgrounds" (p. 28). A study conducted by Sommerlad et al. (2021) indicated that openness to experience, along with agreeableness, and conscientiousness were associated with more perspective-taking and higher empathic concern. According to Widiger (2015), agreeableness relates to the motivation to maintain positive relationships with others and be considered "likeable" by others, and conscientiousness relates to the tendency to be self-controlled, responsible, and obedient.

Stigma

Mental illness stigma has been defined by Pinto et al. (2012) as "negative attitudes and beliefs that motivate the general public to fear, reject, avoid, and enact behaviours of discrimination against people with mental illness" (p. 2), and by Ferrie et al. (2020) as "the consideration of a personal characteristic in a devaluing way, altering a 'normative' identity to an 'abnormal' or 'deviant' identity in that individual's social context" (p. 1). This stigma involves three components: problematic knowledge (e.g. misinformation about, or ignorance of, struggles and realities of mentally ill individuals), problematic attitudes (e.g. premature judgement or prejudice toward individuals upon application of a "mentally ill" label), and problematic behaviour (e.g. treating mentally ill individuals in a discriminatory or "less than" manner) (Brohan et al., 2010). Stigma toward mental illness is then further categorised into two experiences: (1) public stigma (or externalised stigma), which is the stereotypical attitudes held by a society (e.g., being treated negatively and unnecessarily different due to a "mentally ill" label), which may lead to (2) self-stigma (or internalised stigma), the acceptance and internalisation of the negative stereotypes by the individual(s) being stigmatised (e.g., holding oneself to unreasonably limited standards or thinking lowly of oneself due to a "mentally ill" label (Ferrie et al., 2020; Catalano et al., 2021).

According to Corrigan et al. (2001) and Luty et al. (2006), mental illness stigmatisation toward individuals with psychosis and drug dependence, in particular, is prevalent and even endorsed by Americans and other Westerners. Moreover, persons with mental illness are one of the most stigmatised groups in society today, with 21.7% of persons with affective disorders and 41.7% of persons with psychotic disorders reporting significant levels of public and self-stigma (Klik et al., 2019; Catalano et al., 2021).

Brohan et al. (2010) have suggested five common causes of discriminatory behaviour toward individuals suffering from mental illness: a desire to exploit or dominate them (e.g., to benefit oneself socially or use them to make oneself look more capable); an attempt to avoid disease or "contamination" (e.g., fear of contracting the disorder by association); the enforcement of social norms (e.g., social regulation, and "keeping people in their place"); the perception of a lack of ability to function in society (e.g., belief that mentally ill individuals are incapable of helping themselves or useless); or fear of the dangerousness and unpredictability of mentally ill individuals (e.g., fear of random outbursts of emotion or violence).

The negative attitudes towards persons with mental illnesses frequently result in detrimental outcomes for the affected individuals. Specifically, they are less likely to be leased housing (Corrigan et al., 2001); they are less likely to experience positive interaction with the general public, resulting in weakened social network ties (Corrigan et al., 2001; DuPont-Reyes et al., 2020; Klik et al., 2019; Catalano et al., 2021); their employment opportunities are hindered (Corrigan et al., 2001; DuPont-Reyes et al., 2020; Catalano et al., 2021); they often shy away from or refuse professional treatment (DuPont-Reyes et al., 2020; Ferrie et al., 2020; Corrigan & Nieweglowski, 2019; Klik et al., 2019); they have a lower quality of life and self-esteem (DuPont-Reyes et al., 2020; Ferrie et al., 2020; Catalano et al., 2021; Klik et al., 2019; Catalano

et al., 2021; O'Driscoll et al., 2012); they are more likely to engage in delinquent behaviour (O'Driscoll et al., 2012); and they often experience increased levels of depression severity (DuPont-Reyes et al., 2020; Ferrie et al., 2020). Catalano et al. (2021) have suggested an internalisation pathway of mental illness stigma, "from stereotype awareness, to stereotype agreement, to application to self, to self-esteem decrement, to poorer recovery attitudes" (p. 45). So, what is the solution? It seems, therefore, that the disruption of this pathway after stereotype awareness, by means such as the education of the general public or the implementation of a positive support system for individuals with mental illness, may be critical to the improvement of empathetic outcomes for society as a whole.

Hypotheses

The hypotheses for this study are as follows: (1) Empathy toward individuals with mental illness will be related to age, with higher empathy noted in the youth and young adult age groups compared to older adults; (2) empathy toward individuals with mental illness will be related to gender, with females showing higher empathy than males; (3) empathy toward individuals with mental illness will be positively related to familiarity with mental illness; and (4) empathy toward individuals with mental illness will be positively related to openness.

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Method

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Participants

The convenience sample consisting of 627 participants was recruited via social media advertisements, posters placed around Tyndale University's campus, personal email invitations, and word-of-mouth. Seven hundred and fifty-five individuals began the survey, but 79 did not proceed beyond the consent form. Many of these instances may reflect situations where people opted to come back later and begin again when they had more time to complete the study.

The sample varied from approximately 15 years of age to 70 or older, facilitating generational diversity among participants. See Table 1 for the frequency of participants in each age category. The largest age category in this sample was individuals aged 19 to 30, and the smallest age category represented was 18 years and younger.

Table 1

Frequencies of Age

Age	Frequency	Percent
18 or younger	15	2.4%
19-30	280	44.7%
31-50	199	31.7%
51-70	82	13.1%
71 or older	51	8.1%

The sample included 244 male participants (38.9%), 379 female participants (60.4%), and 5 participants (0.8%) selecting the "other" option. See Table 2 for the number of participants having completed each level of education. The most commonly achieved level of education was an undergraduate degree.

Table 2

Frequencies of Highest Level of Education Completed

Highest level of education completed	Frequency	Percent
Elementary school	35	5.6%
High school	160	25.3%
College diploma	17	2.7%
Undergraduate degree	265	42.2%
Masters degree	112	17.8%
Ph.D. or above	18	2.9%
Other	10	1.6%
Prefer not to say	11	1.8%

See Table 3 for frequencies of ethnicity. The most represented ethnicity was of European origins, and the least represented ethnicity was of Middle Eastern origins.

Table 3

Frequencies of Ethnicity

Ethnicity	Frequency	Percent
African origins	45	6.0%
Caribbean origins	29	3.8%
European origins	352	46.6%
East Asian origins	53	7.0%
South Asian origins	31	4.1%
Hispanic or Latinx origins	90	11.9%
Middle Eastern origins	20	2.6%
First Nations, Metis, or other Indigenous origins	34	4.5%
Prefer not to answer	37	4.9%
Other	8	1.1%

See Table 4 for frequencies of religious affiliations. The most represented religious affiliation was Protestant Christian, and the least represented religious affiliation was Hindu.

Table 4

Frequencies of Religious Affiliations

Religious Affiliation	Frequency	Percent
Protestant Christian (e.g., Christian Alliance, Baptist, Pentecostal, Free Methodist, etc.)	405	66.3%
Roman Catholic	28	4.6%
Greek Orthodox	15	2.5%
Russian Orthodox	24	3.9%
Jewish	30	4.9%
Muslim	25	4.1%
Buddhist	18	2.9%
Hindu	8	1.3%
Atheist	22	3.6%
Agnostic	4	0.7%
Prefer not to say	27	4.4%
Other	5	0.8%

Participants were offered compensation for their time and efforts with their choice of 1% extra credit in any Tyndale University Psychology course of their choosing in which they were currently enrolled while participating in the study, or an entry into a draw for a $25 Amazon gift card. Participants were not penalised and still received an opportunity for compensation if they chose to withdraw from the study at any time.

Materials

Informed Consent

All participants were required to read and complete a Consent Form before taking part in the study. Participants under the age of 18 required written consent on paper from a parent/guardian or their school principal acting in *loco parentis* and giving permission via email before participating. This form informed participants of their rights, confidentiality, potential benefits and risks, compensation information, withdrawal procedure, and any disclaimers that they should be aware of before participating in the study. Participants were also provided with the principal researcher's contact information should they have any questions or concerns. See Appendix A for a copy of the Informed Consent Form.

Attitudinal and Behavioural Openness Scale (ABOS)

The Attitudinal and Behavioural Openness Scale (ABOS) was designed by Caligiuri et al. (2000) with the intent to measure the personality trait openness. The authors found it to have good reliability with an alpha of 0.84 ($\alpha = 0.84$). The questionnaire consists of 16 items, all of which are measured with a five-point scale range: for example, statements like, "Other cultures fascinate me" are rated from "Completely disagree" to "Completely agree." The scale measured three factors: attitudes ($\alpha = 0.78$), participation in cultural activities ($\alpha = 0.77$), and comfort with differences ($\alpha = 0.77$). Scores were summed for each factor, with a maximum score of 64. Participants who received a high score on this scale have a high level of the openness trait. See Appendix B for a complete copy of the ABOS.

The Level-of-Contact (LOC) Report

The Level-of-Contact (LOC) Report was designed by Holmes et al. (1999) to measure level of familiarity with persons with mental illness. The authors found it to have good reliability with an alpha of 0.83 ($\alpha = 0.83$). The report consisted of 12 statements of familiarity in which the level of contact with mental illness varied, ranging from lowest level of contact ("I have never

observed a person that I was aware had a mental illness") to highest level of contact ("I have a mental illness"). Participants selected which of these statements applied to them. Scores were weighted by level of familiarity (more familiarity had a higher score) and then summed, with a maximum score of 78. Participants who received a high score on this scale have had more contact with individuals with mental illness. See Appendix C for a complete copy of the LOC Report.

Attitudes to Mental Illness Questionnaire (AMIQ)

The Attitudes to Mental Illness Questionnaire (AMIQ), developed by Cunningham et al. (1993) and validated by Luty et al. (2006), was designed to measure stigmatisation of mental illness. Luty et al. (2006) found this questionnaire to have high reliability with a test-retest reliability score of 0.70 (r [test-retest reliability] = .70), with 1.0 being the highest possible reliability score. In the present study, each participant was presented with one of seven vignettes, randomly assigned based on the participant's birth month, followed by five items, all of which are measured on a five-point scale ranging from "Strongly agree" or "Very likely," to "Strongly disagree" or "Very unlikely," with an additional "Don't know" option. Examples of these items included the following: "I would be comfortable if John was my colleague at work;" "How likely do you think it would be for John's wife to leave him." Scores were summed, with a maximum score of 10 for each vignette. Participants who received a lower score had more negative attitudes toward mental illness. See Appendix D for a complete copy of the AMIQ.

Attribution Questionnaire-27 (AQ-27)

The Attribution Questionnaire-27 (AQ-27), developed by Corrigan et al. (2003), was designed to measure five constructs of mental health stigma: blame, pity, anger, fear, help/avoidance, and coercion/segregation. The researchers indicated that each construct had high

reliability, indicated by alpha scores: blame ($\alpha = 0.70$; questions 9, 10, 20), pity ($\alpha = 0.74$; questions 8, 19, 24), anger ($\alpha = 0.89$; questions 1, 3, 11), fear ($\alpha = 0.96$; questions 2, 16, 21), help/avoidance ($\alpha = 0.88$; questions 6, 7, 14, 17, 18, 23), and coercion/segregation ($\alpha = 0.89$; questions 4, 5, 12, 13, 15, 22). In the present study, each participant was presented with one of four vignettes, randomly assigned based on the participant's birth month, followed by 13 items, all of which were measured on a nine-point scale. For example, statements including the following were rated as such: "If I were an employer, I would interview Harry for a job" from "Not likely" to "Very likely"; and "I would be willing to talk to Harry about his problems" from "Not at all" to "Very much." Items representing each of the five constructs were summed and divided by the number of items (i.e., 5). The vignettes differed in level of real danger and controllability of cause: Harry 1 was not dangerous, Harry 2 was dangerous with no address of the cause of his condition, Harry 3 was dangerous but not responsible for his condition, and Harry 4 was dangerous but was responsible for his condition. Participants who received a higher score had more negative attributions toward mental illness. See Appendix E for a complete copy of the AQ-27.

Demographics Survey

This survey was developed to measure participants' general demographics. Data collected from this survey included participants' gender, age, ethnicity, highest level of education completed, and religion. See Appendix F for a complete copy of the Demographics Survey.

Procedure

This study received approval from the Tyndale University Research Ethics Board. Participants were recruited as a convenience sample using posters hung around campus (see Appendix G for poster), social media advertisements, in-class announcements, and personal

invitations. Prior to participants' commencement with the measures, they were required to read and indicate agreement with the Informed Consent, which included information regarding the purpose of the study and their own rights. Participants under 18 who were not under the representation of a school principal acting in *loco parentis* were required to provide parental consent in the form of a hand-written signature on the Informed Consent form.

Before completing both the AMIQ and the AQ-27, participants were asked to report their birth month. This method of random assignment placed each participant in only one vignette from each of the two scales.

The research was completed entirely online through SurveyMonkey.com. Upon submission of their Informed Consent, participants were invited to complete, in the following order, the Attitudinal and Behavioural Openness Scale (ABOS), the Level-of Contact (LOC) Report, and Attitudes to Mental Illness Questionnaire (AMIQ), the Attribution Questionnaire-27 (AQ-27), and a demographics survey. Participants completed these measures in approximately 15 minutes or less.

Results

Descriptive Statistics

The Level of Contact Report (LOC) was used to measure participants' familiarity with individuals with mental illness. The mean score was 23.14 (n=670), the minimum score being 1.00 and the maximum score being 77.00, with higher scores indicating greater familiarity. The standard deviation was 18.74. Most participants had watched a movie or television show which portrayed a mentally ill character, and quite few reported having never observed a person they thought was mentally ill. See Table 5 for frequencies of responses to the LOC.

Table 5

LOC Statement	Weight	N	Percent
I have never observed a person that I was aware had a mental illness.	1	63	9.4%
I have observed, in passing, a person I believe may have had a mental illness.	2	335	50.0%
I have watched a movie or television show in which a character depicted a person with mental illness.	3	428	63.9%
I have watched a documentary on the television about mental illness.	4	305	45.5%
I have observed persons with a mental illness on a frequent basis.	5	206	30.7%
I have worked with a person who had a mental illness at my place of employment or education institution.	6	223	33.3%
My job includes providing services to persons with a mental illness.	7	143	21.3%
My job involves providing services/treatment for persons with a mental illness.	8	163	24.3%
A friend of the family has a mental illness.	9	229	34.2%
I have a relative who has a mental illness.	10	269	40.1%
I live with a person who has a mental illness.	11	143	21.3%
I have a mental illness.	12	106	15.8%

The Attitudinal and Behavioural Openness Scale (ABOS) was used to measure participants' personality trait of openness. Descriptive statistics for this scale are presented in Table 5. These means were based on summing the five questions related to each subscale (six questions for participation in cultural activities). The mean scores of each subscale were 14.08 (attitudes), 13.33 (participation in cultural activities), and 7.76 (comfort with differences), where higher scores reflect greater openness. The standard deviations for the subscales were roughly similar, varying around 4.07. Descriptive statistics for total openness scores were also computed

by summing the scores for each participant's responses to the subscale questions. The ABOS scores had an acceptable internal reliability, with alphas all greater than .75.

Table 6

Descriptive Statistics for the Attitudinal and Behavioural Openness Scale (ABOS)

Openness Subscale	N	Minimum	Maximum	Mean	Std. Deviation	a
Attitudes	675	.00	20.00	14.08	4.14	.78
Participation in cultural activities	676	.00	24.00	13.33	4.17	.77
Comfort with differences	676	.00	20.00	7.76	3.90	.77
Openness total	676	.00	64.00	35.15	8.62	.79

The Attitudes toward Mental Illness Questionnaire (AMIQ) was used to measure perceived stigma associated with different conditions, with higher scores reflecting greater empathy. Descriptive statistics for this scale are presented in Table 6. The means were based on summing each participant's responses to 5 questions pertaining to each vignette, with responses coded on a scale ranging from -2 (strongly disagree/very unlikely) to +2 (strongly agree/very likely). Responses to questions 4 and 5 were reverse-coded so that lower scores would reflect greater stigma. The greatest level of stigma was found for John, who takes daily heroin injections, and Robert, who is a convicted criminal. The least level of stigma was found for Peter, who has diabetes, and Tim, who self-harms and tries to overdose. The AMIQ scores had questionable internal reliability with alphas ranging from .48 to .75.

Table 7

Descriptive Statistics for the Attitudes toward Mental Illness Questionnaire (AMIQ)

Vignette	N	Minimum	Maximum	Mean	Std. Deviation	a
John (daily heroin injections)	120	-10.00	5.00	-3.93	3.73	.75
Tim (overdosed, self-harm)	95	-8.00	8.00	0.57	2.96	.48
Steve (recovering alcoholic)	103	-9.00	6.00	0.31	3.11	.61
Robert (criminal)	102	-10.00	5.00	-2.83	3.47	.63
Peter (diabetic)	109	-8.00	10.00	3.69	3.98	.63
Michael (schizophrenic)	74	-8.00	7.00	-.80	3.09	.59
Will (no condition)	64	-6.00	9.00	3.20	2.94	.56

The Attribution Questionnaire-27 (AQ-27) was used to measure nine constructs of mental health stigma: blame, pity, anger, fear, danger, help, avoidance, and coercion, segregation. The means were based on summing each participant's responses to 24 questions pertaining to each vignette, with responses coded on a scale ranging from 1 (not at all/not likely) to 9 (very much/very likely), with higher scores reflecting greater stigma. The greatest level of stigma was found for Harry 4, whose mental illness presents danger to others, and the cause of his mental illness was something over which Harry had control. The least level of stigma was found for Harry 1, whose mental illness presents no danger to others. The standard deviations for the subscales varied between 4.26 and 7.89. The AQ-27 scores had acceptable internal reliability with alphas ranging from .69 to .78. See Table 8 for descriptive statistics for each vignette.

It is worth acknowledging an error committed by the researcher while preparing the survey, which involved the accidental omitting of two questions from the original AMIQ scale, both of which would have been used to measure the subscale of dangerousness. In an attempt to correct this error, the data from the singular remaining question for the dangerousness subscale was multiplied three times to make up for the missing data. See Table 9 for descriptive statistics for each stigma subscale for each vignette.

Table 8

Descriptive Statistics for Attribution Questionnaire-27 (AQ-27) Overall

Vignette	N	Minimum	Maximum	Mean	Std. Deviation	a
Harry 1 (no danger)	169	2.30	7.81	4.57	1.24	.78
Harry 2 (danger)	137	3.07	7.81	5.59	1.05	.69
Harry 3 (danger without controllability of cause)	175	2.19	8.70	5.60	1.14	.75
Harry 4 (danger with controllability of cause)	153	2.59	8.41	5.63	1.09	.72

Table 9

Attribution Questionnaire-27 (AQ-27) Subscale Means

	Harry 1 (no danger)	Harry 2 (danger)	Harry 3 (danger without controllability of cause)	Harry 4 (danger with controllability of cause)
Blame	12.69	12.42	12.95	14.53
Anger	11.49	14.94	15.09	15.30
Pity	18.15	20.01	19.90	19.92
Help	18.20	17.50	17.89	17.89
Danger	11.02	15.55	15.63	15.65
Fear	11.76	17.64	17.50	17.28
Avoidance	13.24	16.51	17.15	16.89
Segregation	11.14	16.22	16.13	15.99
Coercion	15.14	18.63	18.26	15.97

Investigation of Hypotheses

Empathy and Age

A series of one-way ANOVAs was carried out to test the hypothesis that empathy toward individuals with mental illness as measured by the AMIQ would be related to age. Youth participants (18 and younger) were excluded from the analysis because there was not a sufficient number of participants in this category. The 51-70 and 71 and older groups were grouped because the samples were too small to be considered separately. A significant result was found for two vignettes: Steve, who is recovering from an alcohol addiction, $F (2, 89) = 8.18$, $p < .001$; Peter, who is diabetic, $F (2, 102) = 4.34$, $p = .02$. Therefore, older adults showed significantly

greater empathy than younger adults toward a convicted criminal and a diabetic. See Table 10 for means and standard deviations of the one-way ANOVA.

Table 10

One-Way ANOVA Statistics for Empathy (AMIQ) and Age

		John (heroin)	Tim (self-harm)	Steve* (alcoholic)	Robert (criminal)	Peter* (diabetic)	Michael (schizophrenic)	Will (no condition)
19-30	Mean	-3.75	.24	-.10	2.66	2.98	-.54	1.83
	Std. Dev.	3.80	2.57	2.49	3.44	3.84	2.93	2.82
	N	60	45	39	50	50	24	12
31-50	Mean	-4.77	.80	-.31	-2.7	3.20	-1.48	3.86
	Std. Dev.	3.82	2.40	3.63	3.74	3.68	2.49	3.53
	N	31	25	32	31	35	31	14
51 or older	Mean	-3.63	1.00	2.67	-3.6	5.90	.00	3.86
	Std. Dev.	3.65	4.01	2.03	3.00	4.31	3.96	3.53
	N	24	18	21	12	20	13	25

*$p < .05$.

A series of one-way ANOVAs was carried out to test the hypothesis that empathy toward individuals with mental illness as measured by the AQ-27 would be related to age. Although no relationships were found for the first vignette, significant relationships were found for the remaining three vignettes: Harry 2, whose mental illness presents danger to others, $F(2, 131) = 4.54$, $p = .01$; Harry 3, whose mental illness presents danger to others that Harry does not have control over, $F(2, 163) = 4.02$, $p = .02$; and Harry 4, whose mental illness presents danger to others that Harry has control over, $F(2, 146) = 6.58$, $p = .00$. Notably, the young adults showed significantly more stigma toward all dangerous vignettes, regardless of the described person's responsibility for their condition, than the older and middle-aged young adults. See Figures 1-4 for illustrations of the mean stigma scores for each Harry by age. The error bar graphs illustrate

the mean stigma score for each age category indicated by the dots in the centre, with whiskers (bars that extend from the means) that indicate the 95% confidence interval for that mean. Since the error bars all overlap in Figure 1, none of the means are significantly different.
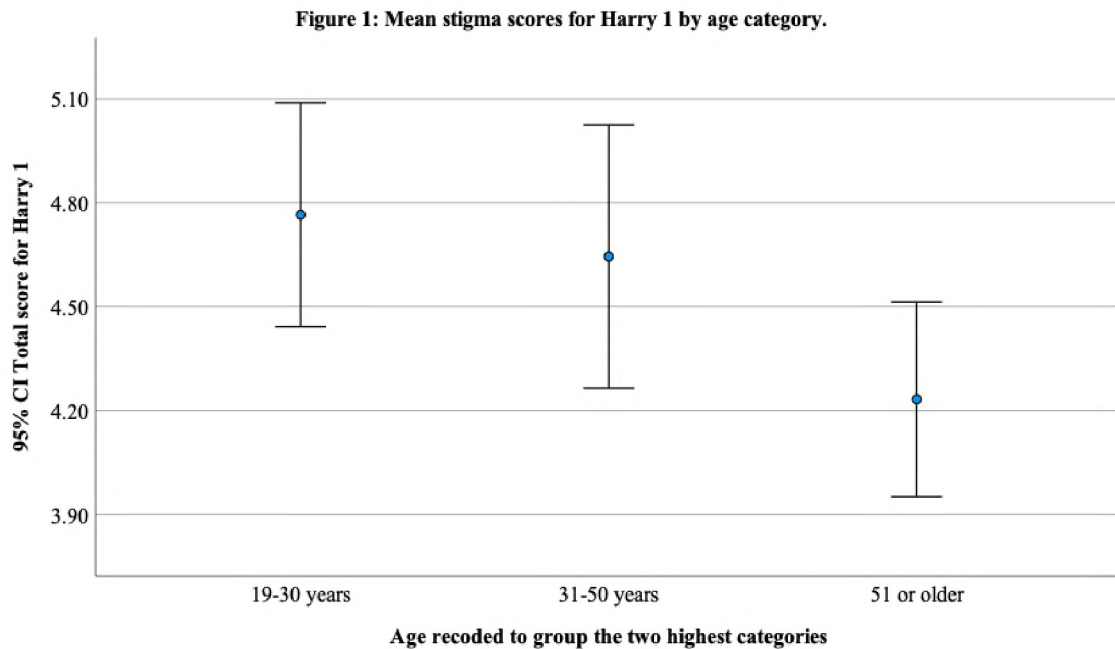
Figure 1: Mean stigma scores for Harry 1 by age category.

Since the error bar for the 19-30 group does not overlap with the error bar for the 51 and older group in Figure 2, these two means are significantly different, with younger adults showing greater stigma than older adults.

Figure 2: Mean stigma scores for Harry 2 by age category.
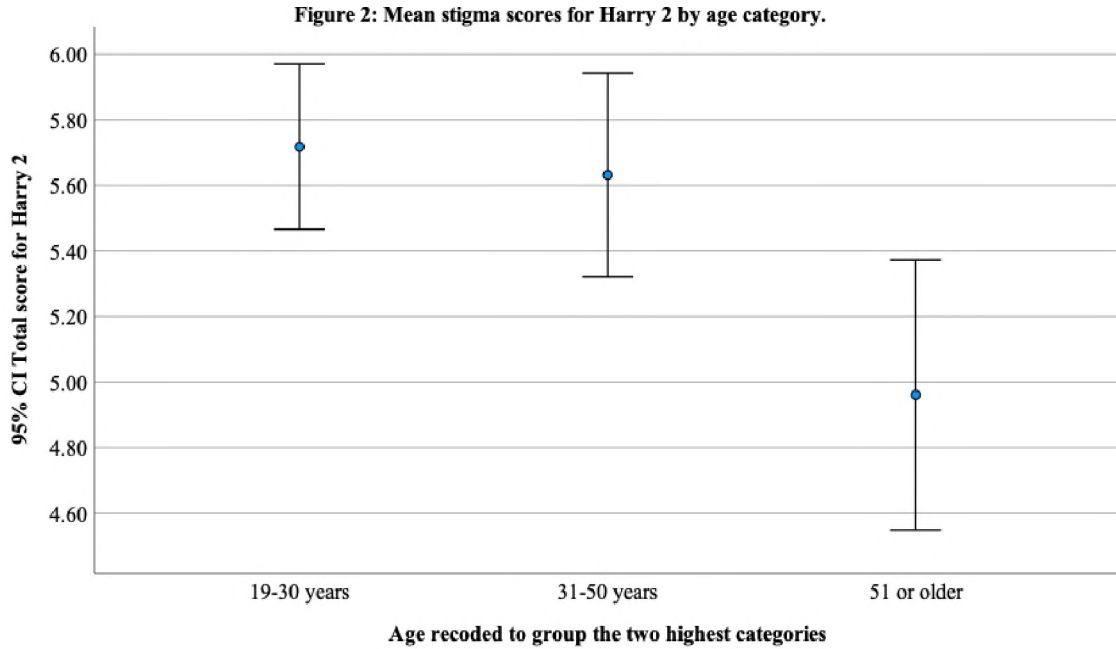
Since the error bar for the 19-30 group does not overlap with the error bar for the 51 and older group in Figure 3, these two means are significantly different, with younger adults showing greater stigma than older adults.

Figure 3: Mean stigma scores for Harry 3 by age category.
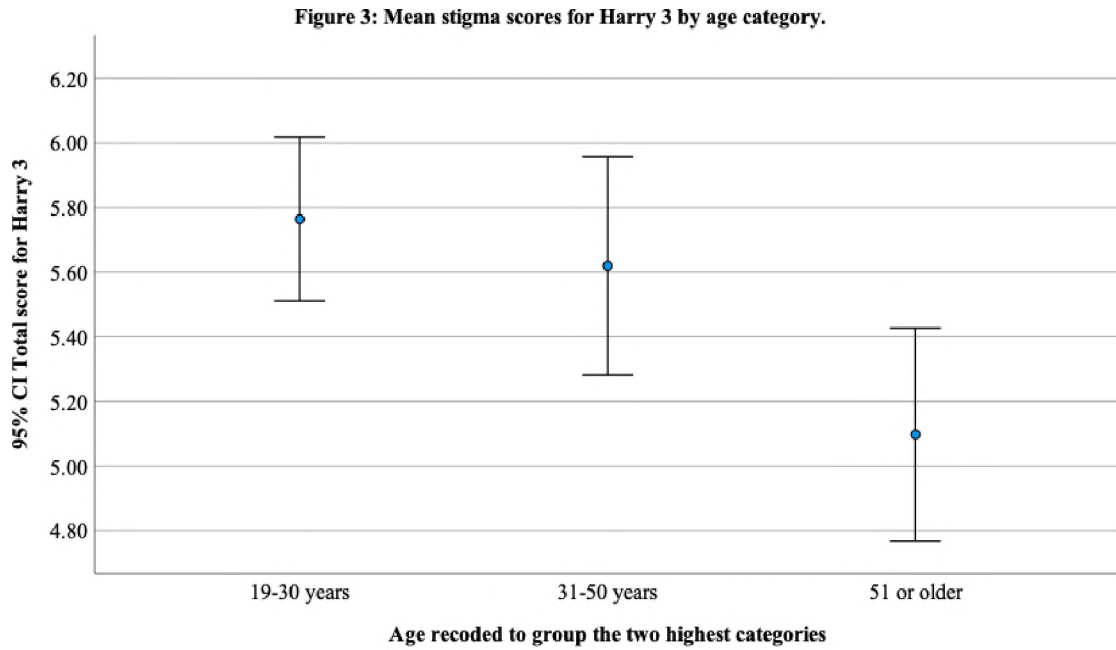
Since the error bar for the 19-30 group does not overlap with the error bar for the 51 and older group in Figure 4, these two means are significantly different, with younger adults showing greater stigma than older adults.

Figure 4: Mean stigma scores for Harry 4 by age category.
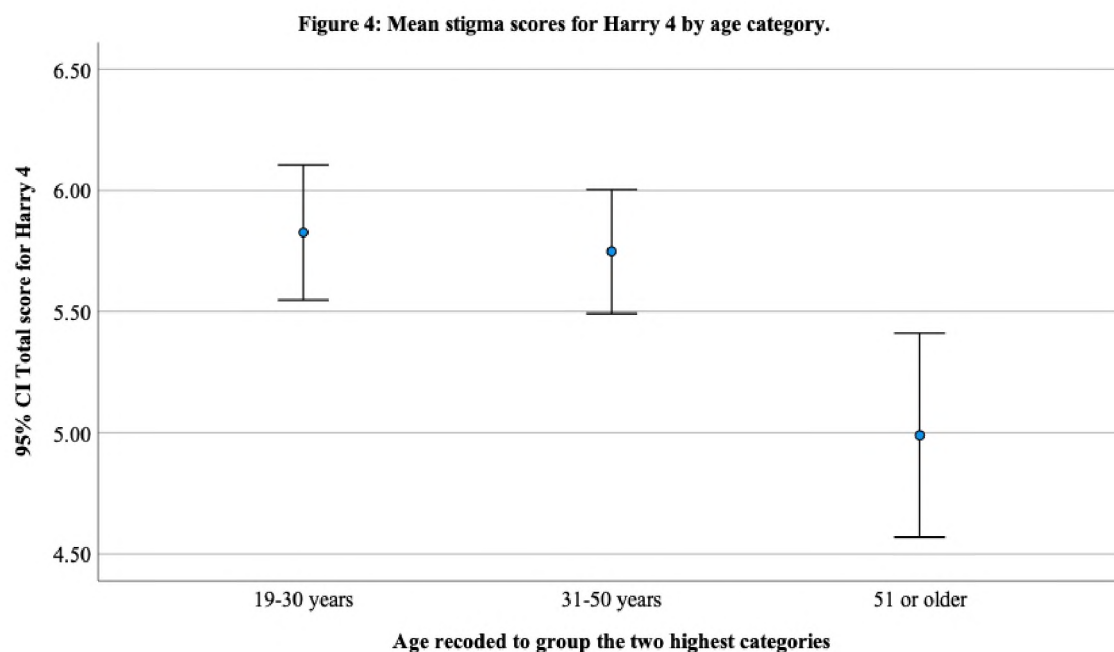
Empathy and Gender

A series of independent samples t-tests was carried out to test the hypothesis that female participants showed less stigma (were more empathetic) than male participants toward each of the individuals with mental illness described in the AMIQ. Females did not show significantly less stigma in their responses to any AMIQ vignette, however the females almost showed significantly greater stigma than the males toward John (heroin addict), $t(113) = 1.58$, $p = .06$. Females' level of stigma toward Peter (diabetic) approached significance in the direction of greater stigma than males, $t(103) = 1.63$, p. $= .054$. Therefore, female participants did not show significantly less stigma than males toward any of the scenarios in the AMIQ vignettes. See Table 11 for the means and standard deviations of the independent samples t-test. Note that higher AMIQ scores indicate greater empathy.

Table 11

Independent Samples T-Test Statistics for Empathy (AMIQ) and Gender

		John (heroin)	Tim (self-harm)	Steve (alcoholic)	Robert (criminal)	Peter (diabetic)	Michael (schizophrenic)	Will (no condition)
Males	Mean	-3.28	-.04	.27	-2.98	2.92	-1.12	2.74
	Std. Dev.	3.77	2.72	3.24	3.97	4.03	2.76	3.25
	N	46	25	33	45	50	17	27
Females	Mean	-4.42	.85	.27	-2.82	4.18	-.80	3.54
	Std. Dev.	3.77	2.93	3.06	3.06	3.92	3.09	3.04
	N	69	61	64	51	55	51	28

*$p < .05$.

A series of independent samples t-tests were carried out to test the hypothesis that female participants showed less stigma (were more empathetic) than male participants toward the individuals with mental illness described in the AQ-27. Females showed significantly less stigma in their responses to Harry 1, whose mental illness does not present danger to others: t (145.02) = 2.13, p = .02. Thus, female participants showed less stigma than males when Harry was not dangerous. Females did not show significantly less stigma in their response to the following vignettes: Harry 2, whose mental illness presents danger to others, t (132) = -.19, p = .43; Harry 3, whose mental illness presents danger to others that Harry had no control over, t (169) = .95, p = .17; and Harry 4, whose mental illness presents danger to others that Harry had control over, t (149) = .04, p = .48. Therefore, female participants showed significantly less stigma than males only when Harry was not dangerous, but did not show significantly less stigma than males when Harry was dangerous, regardless of his own responsibility for his condition. See Table 12 for means and standard deviations of the independent samples t-test. Note that higher AQ-27 scores indicate greater stigma.

Table 12

Independent Samples T-Test Statistics for Empathy (AQ-27) and Gender

		Overall stigma toward Harry 1 (no danger) *	Overall stigma toward Harry 2 (danger)	Overall stigma toward Harry 3 (danger without controllability of cause)	Overall stigma toward Harry 4 (danger with controllability of cause)
Males	Mean	4.81	5.55	5.70	5.65
	Std. Dev.	1.17	0.96	1.11	1.18
	N	66	45	77	56
Females	Mean	4.41	5.59	5.53	5.64
	Std. Dev.	1.24	1.10	1.18	1.02
	N	100	89	94	95

*$p < .05$.

Empathy and Familiarity

A series of Pearson correlations was computed to test the hypothesis that empathy toward individuals with mental illness as measured by the AMIQ would be positively related to familiarity with mental illness. A significant positive correlation was found between familiarity with mental illness and empathy (lack of stigma) toward Tim, who overdosed and self-harmed, r(n=95) = .45, p < .001. See Figure 5 for a scatterplot of this relationship.
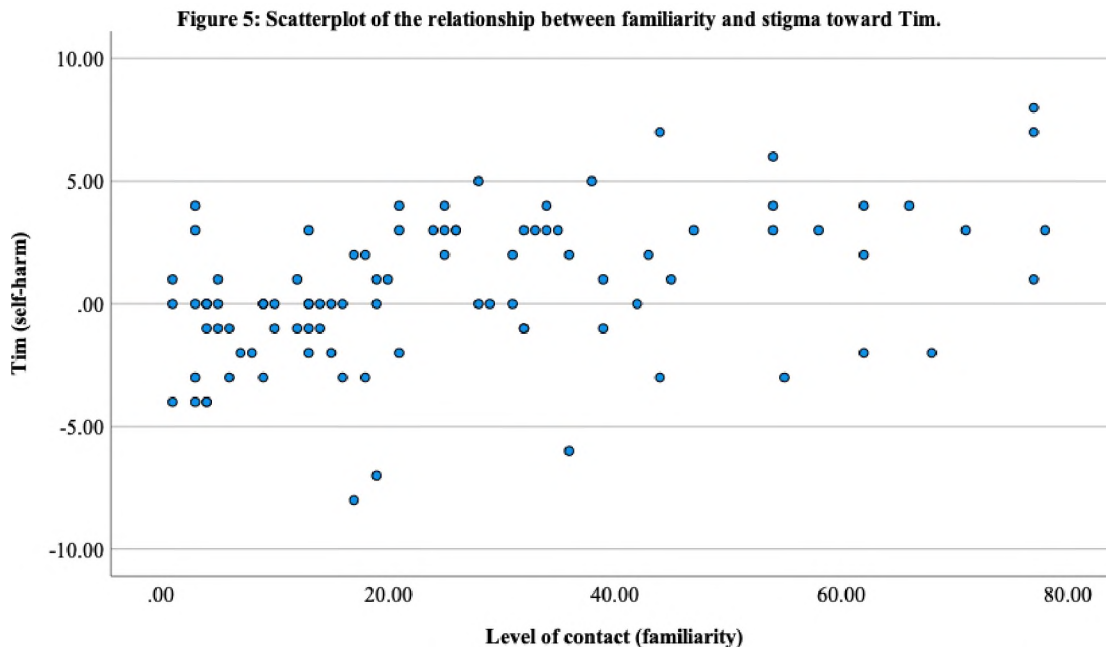
Figure 5: Scatterplot of the relationship between familiarity and stigma toward Tim.
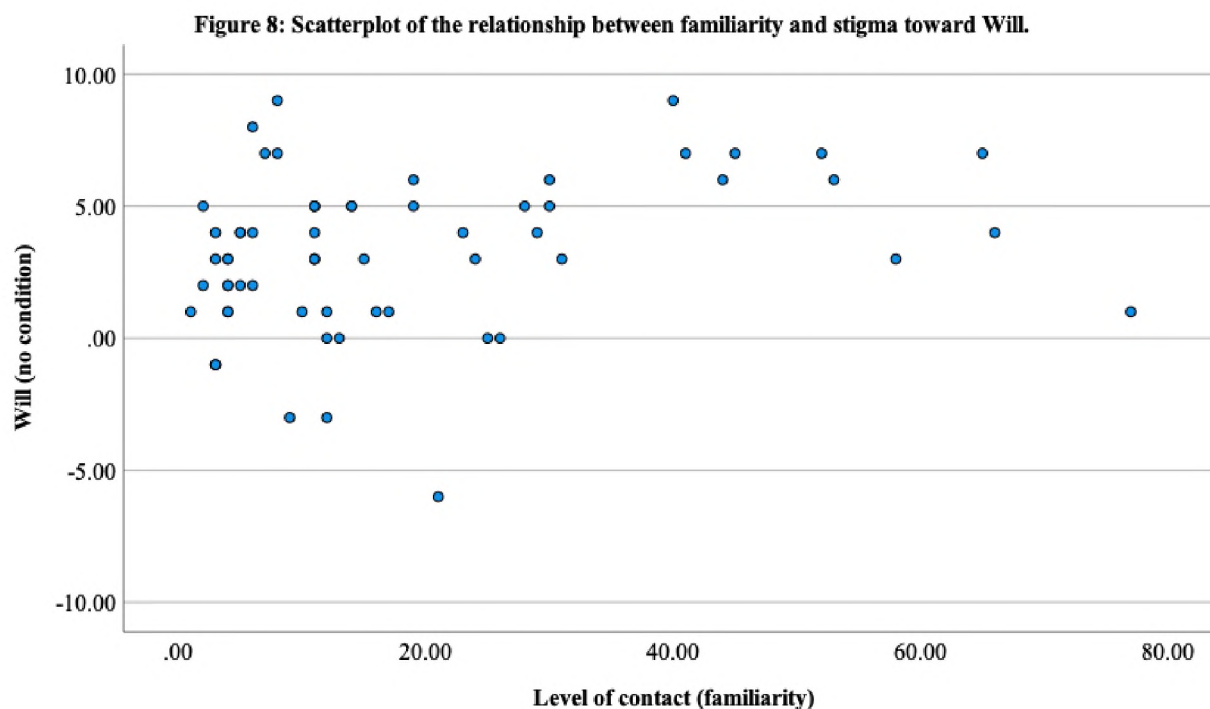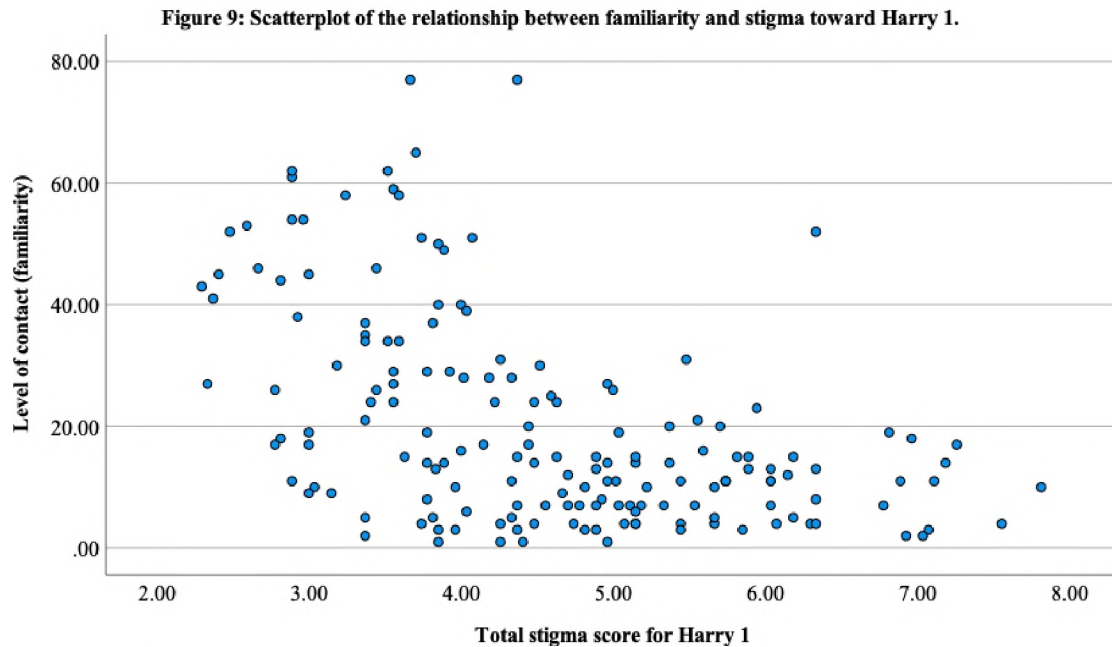
A significant positive correlation was found between familiarity with mental illness and empathy (lack of stigma) toward Steve, who is recovering from an alcohol addiction, r(n=103) = .33, p < .001. See Figure 6 for a scatterplot of this relationship.
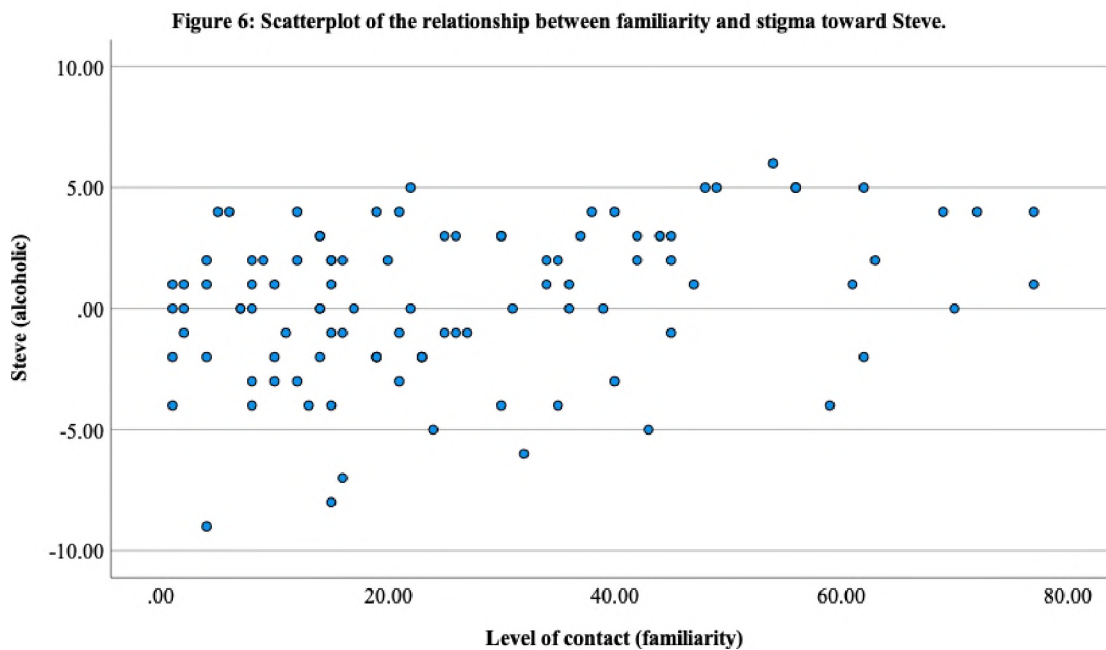
Figure 6: Scatterplot of the relationship between familiarity and stigma toward Steve.

A significant positive correlation was found between familiarity with mental illness and empathy (lack of stigma) toward Peter, who is diabetic, r(n=109) = .39, p < .001. See Figure 7 for a scatterplot of this relationship.

Figure 7: Scatterplot of the relationship between familiarity and stigma toward Peter.
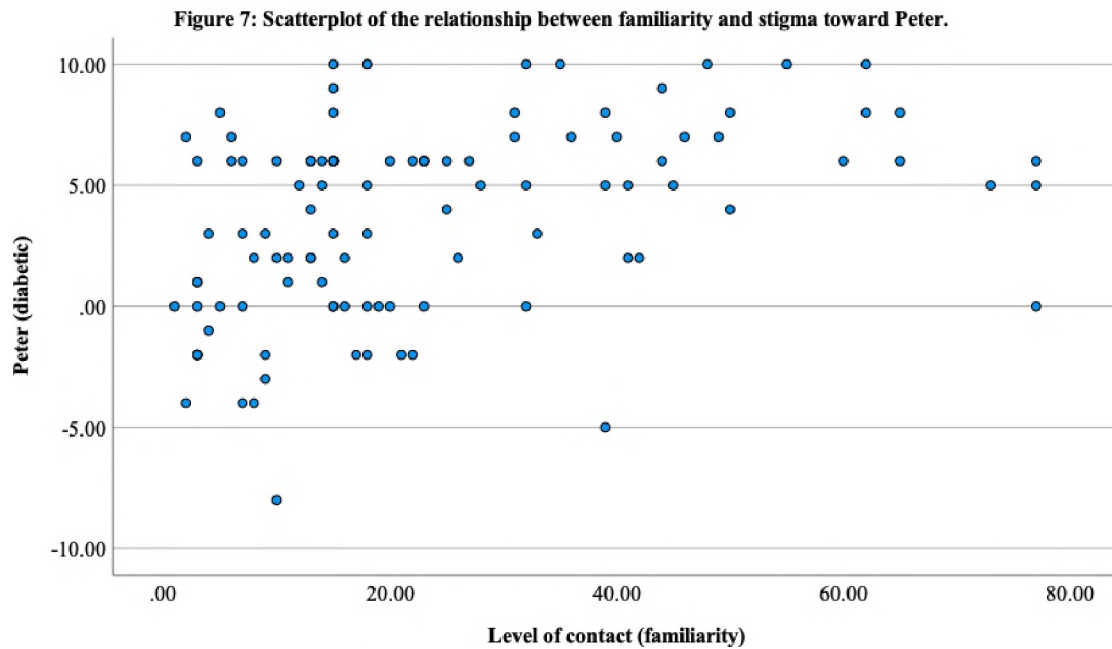
Curiously, a significant positive correlation was found between familiarity with mental illness and empathy (lack of stigma) toward Will, who had no condition, r(n=62) = .27, p = .02. See Figure 8 for a scatterplot of this relationship.

Figure 8: Scatterplot of the relationship between familiarity and stigma toward Will.

Therefore, when participants had greater familiarity with mental illness, they had greater empathy toward some individuals. Specifically, this significant relationship was found for vignettes that described someone who self-harmed and overdosed, an individual who is recovering from alcoholism, an individual with diabetes, and an individual with no condition. A significant relationship was not found between familiarity with mental illness and empathy (lack of stigma) toward John, who takes daily heroin injections, $r(n=120) = -.08$, $p = .20$; Robert, a convicted criminal, $r(n=102) = -.11$, $p = .15$; or Michael, who has schizophrenia, $r(n=73) = .09$, $p = .22$.

A series of Pearson correlations was computed to test the hypothesis that stigma toward individuals with mental illness would be negatively related to familiarity with mental illness as measured by the AQ-27. A significant negative correlation was found between familiarity with

mental illness and empathy (lack of stigma) toward Harry 1, who was not dangerous, r(n=169) =

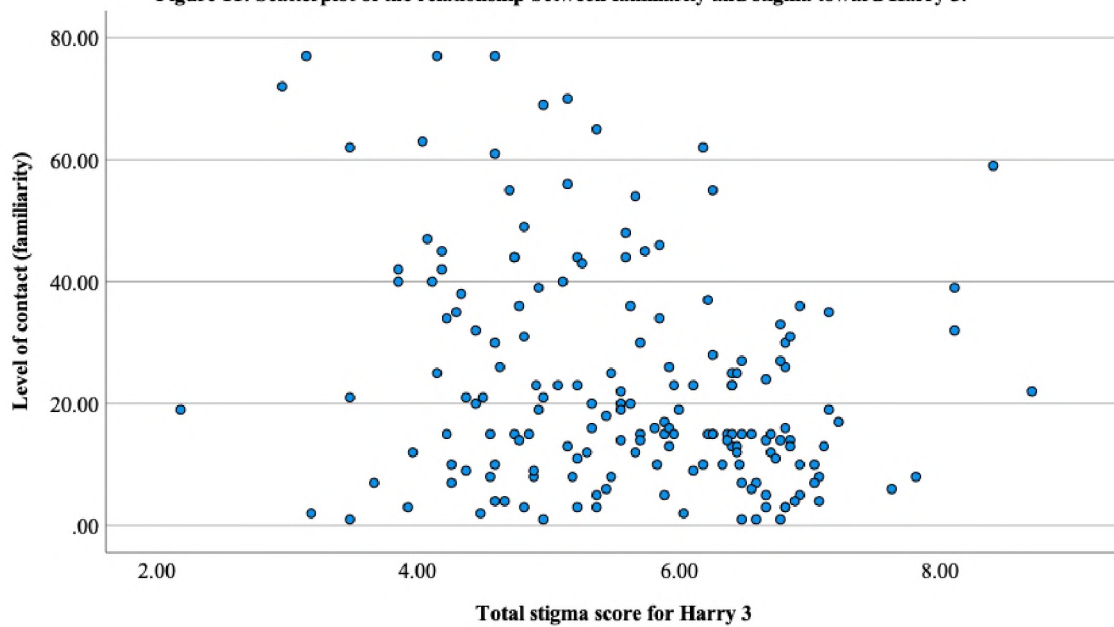-.50, p < .001. See Figure 9 for a scatterplot of this relationship.

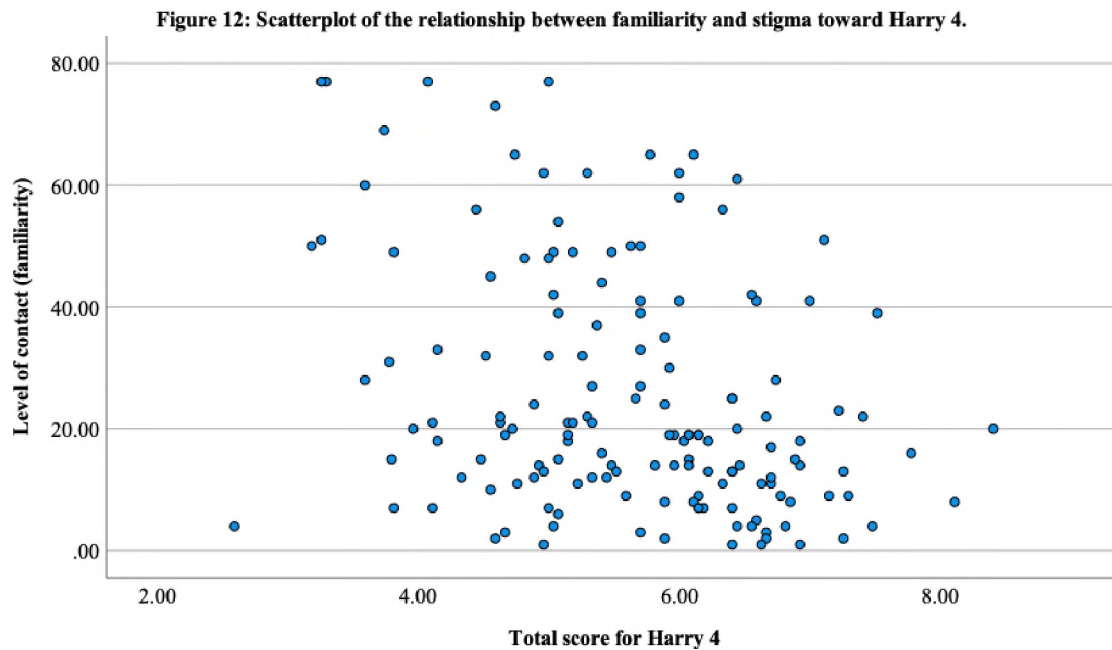Figure 9: Scatterplot of the relationship between familiarity and stigma toward Harry 1.

A significant negative correlation was found between familiarity with mental illness and

empathy (lack of stigma) toward Harry 2, who was dangerous, r(n=137) = -.34, p < .001. See

Figure 10 for a scatterplot of this relationship.

Figure 10: Scatterplot of the relationship between familiarity and stigma toward Harry 2.
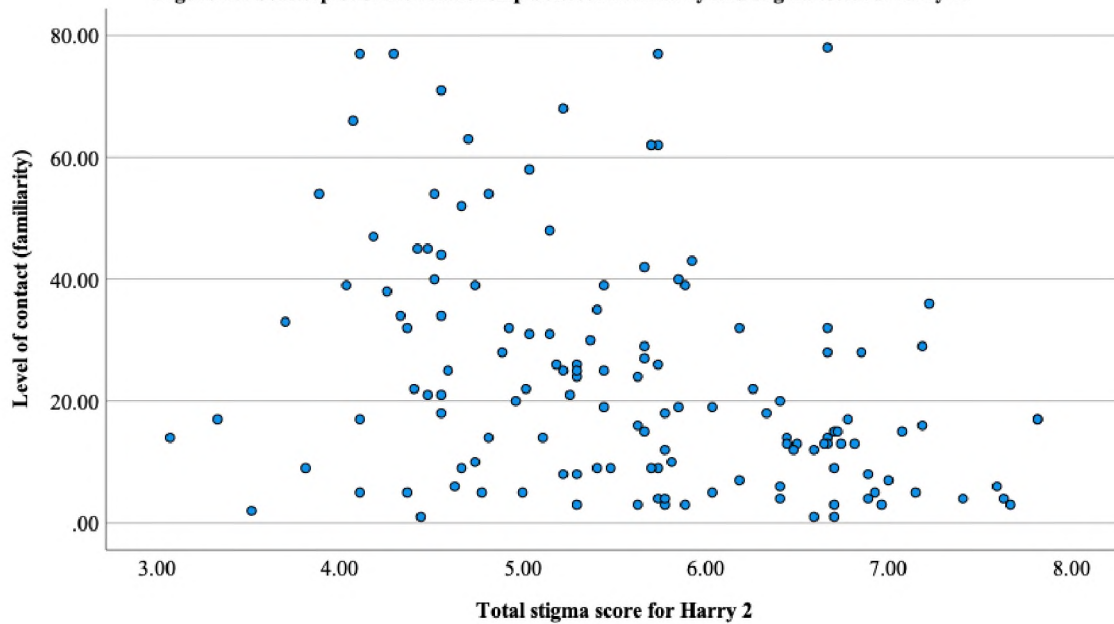
A significant negative correlation was found between familiarity with mental illness and empathy (lack of stigma) toward Harry 3, who was dangerous and not responsible for the cause of his condition, $r(n=174) = -.26$, $p < .001$. See Figure 11 for a scatterplot of this relationship.

Figure 11: Scatterplot of the relationship between familiarity and stigma toward Harry 3.

A significant negative correlation was found between familiarity with mental illness and empathy (lack of stigma) toward Harry 4, who was dangerous and responsible for the cause of his condition, r(n=152) = -.33, p < .001. See Figure 12 for a scatterplot of this relationship.
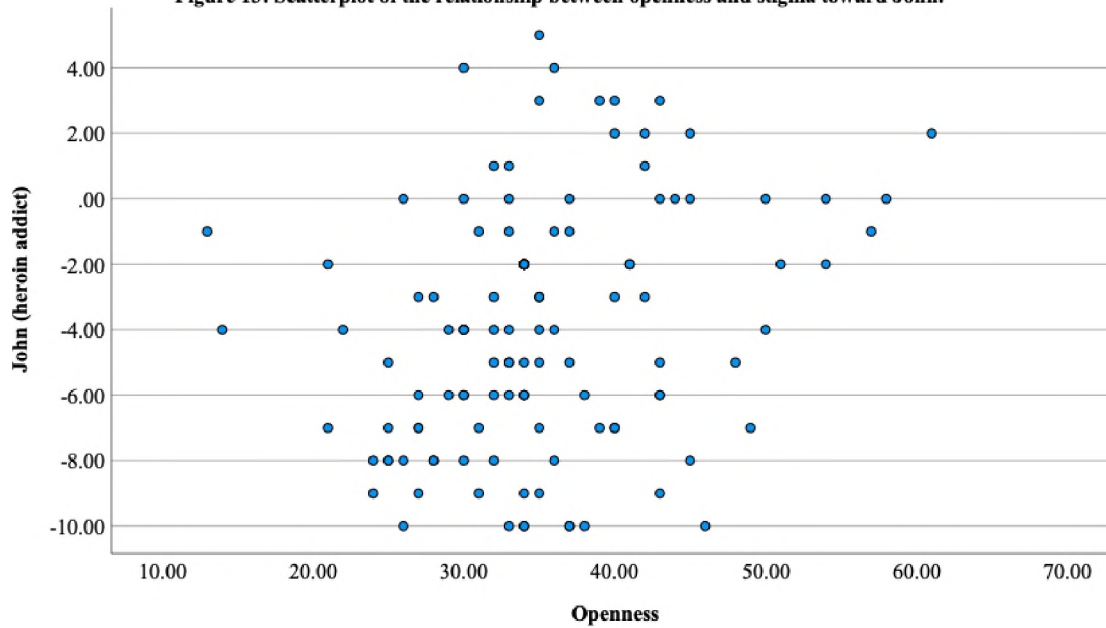
Figure 12: Scatterplot of the relationship between familiarity and stigma toward Harry 4.

Therefore, when participants' had greater familiarity with mental illness, they had less stigma toward individuals with mental illness, regardless of their perception of that individual's responsibility for their own condition.
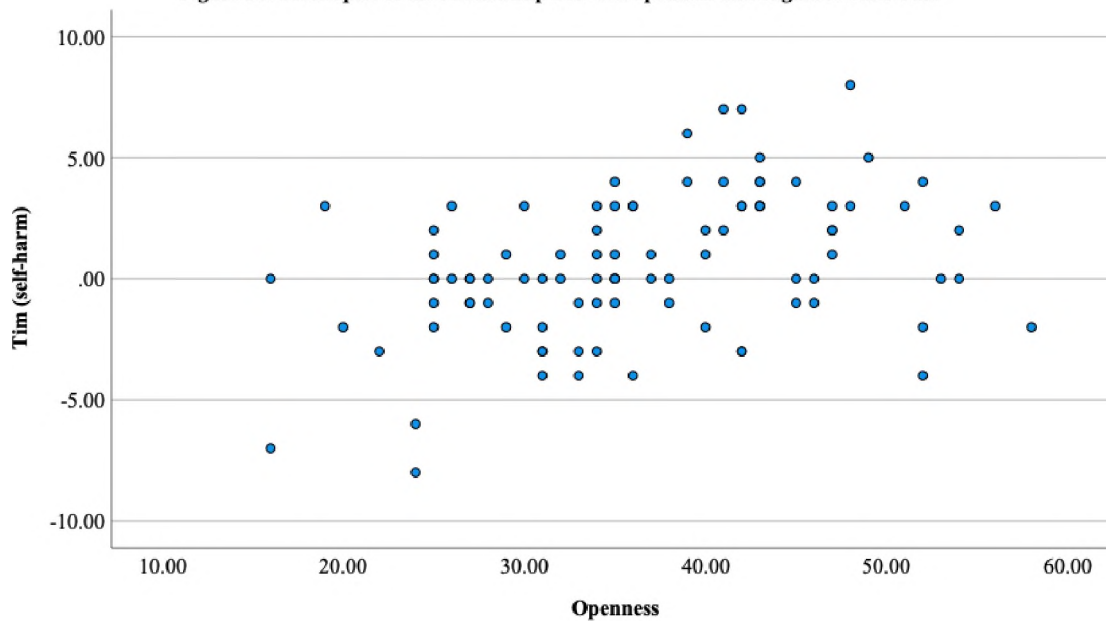
Empathy and Openness

A series of Pearson correlations was computed to test the hypothesis that empathy toward individuals with mental illness as measured by the AMIQ would be positively related to openness. A significant positive correlation was found between openness and empathy (lack of stigma) toward John, who injected heroin daily, r(n=120) = .28, p = .00. See Figure 13 for a scatterplot of this relationship.

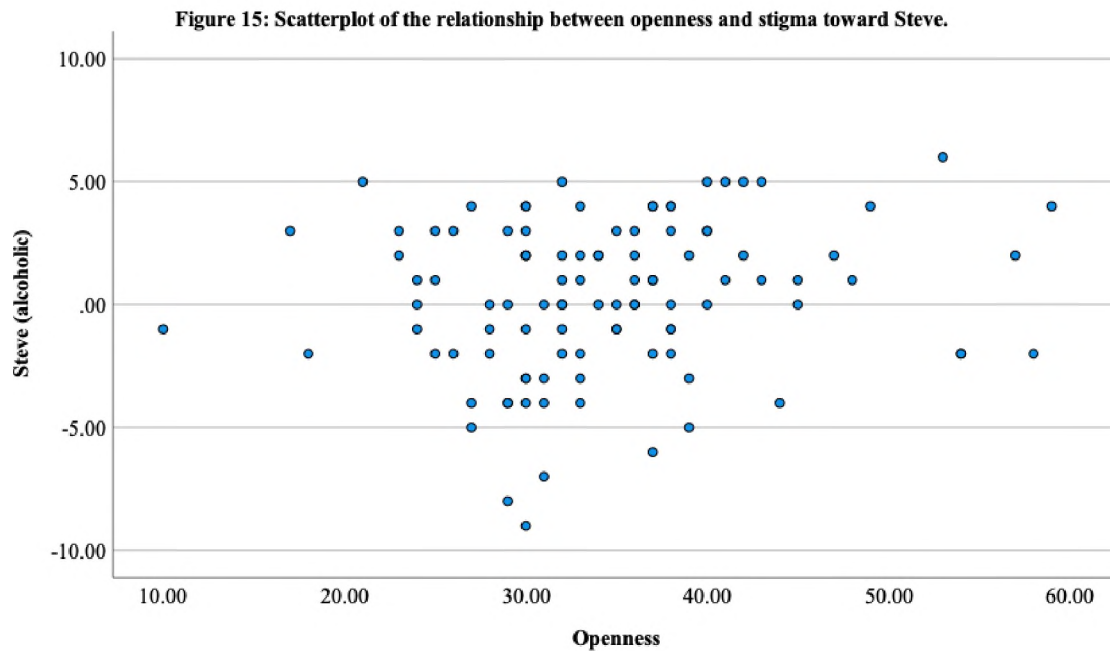**Figure 13: Scatterplot of the relationship between openness and stigma toward John.**

A significant positive correlation was found between openness and empathy (lack of stigma) toward Tim, who overdosed and self-harmed, r(n=95) = .39, p < .001. See Figure 14 for a scatterplot of this relationship.

Figure 14: Scatterplot of the relationship between openness and stigma toward Tim.

A significant positive correlation was found between openness and empathy (lack of stigma) toward Steve, who is recovering from an alcohol addiction, r(n=103) = .17, p = .05. See Figure 15 for a scatterplot of this relationship.

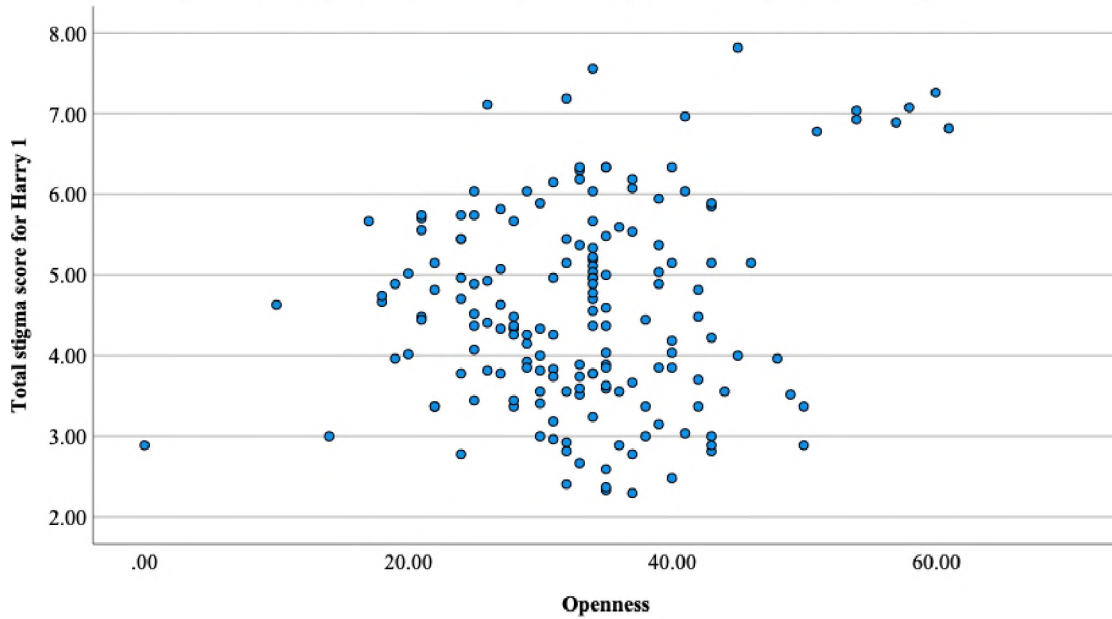Figure 15: Scatterplot of the relationship between openness and stigma toward Steve.

A significant positive correlation was found between openness and empathy (lack of stigma) toward Robert, a convicted criminal, r(n=102) = .33, p < .001. See Figure 16 for a scatterplot of this relationship.

Figure 16: Scatterplot of the relationship between openness and stigma toward Robert.
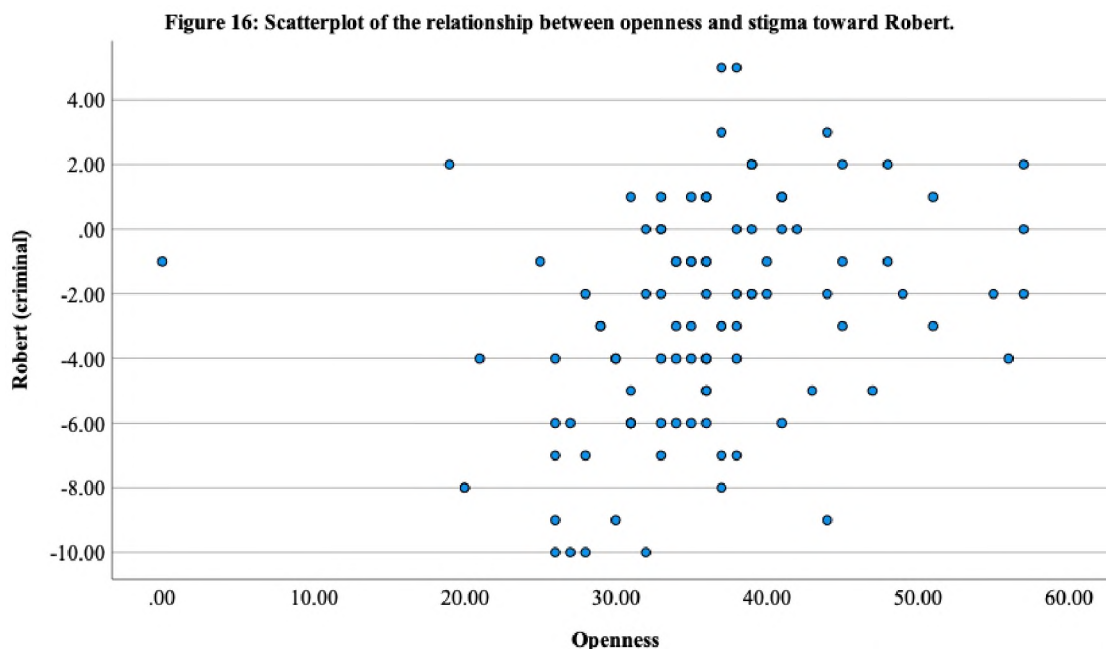
A significant correlation was not found for three vignettes: Peter (diabetic), r(n=109) = -.14, p = .08; Michael (schizophrenic), r(n=74) = -.01, p = .46; and Will (no condition), r(n=64) = -.03, p = .42. Therefore, when participants had a greater openness score, they showed significantly more empathy toward an individual who injected heroin daily, an individual who self-harms and overdosed, an individual who is recovering from alcoholism, and a convicted criminal.

A series of Pearson correlations was computed to test the hypothesis that stigma toward individuals with mental illness as measured by the AQ-27 would be negatively related to openness. Rather, a weak but significant positive correlation was found between openness and stigma toward Harry 1, who was not dangerous, r(n=169) = .18, p = .01. See Figure 17 for a scatterplot of this relationship.

Figure 17: Scatterplot of the relationship between openness and stigma toward Harry 1.


Another weak but significant positive correlation was found between openness and stigma toward Harry 2, who was dangerous, $r(n=137) = .15$, $p = .05$. See Figure 18 for a scatterplot of this relationship.

Figure 18: Scatterplot of the relationship between openness and stigma toward Harry 2.
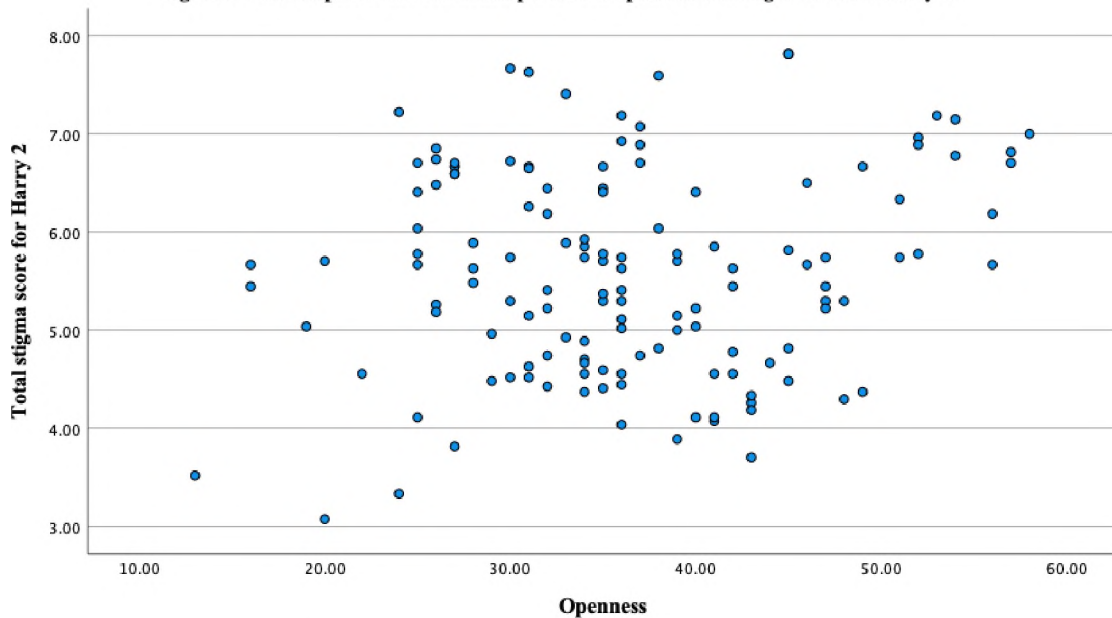
Again, a weak but significant positive correlation was found between openness and stigma toward Harry 3, who was dangerous but not responsible for the cause of his condition, r(n=175) = .19, p = .01. See Figure 19 for a scatterplot of this relationship.

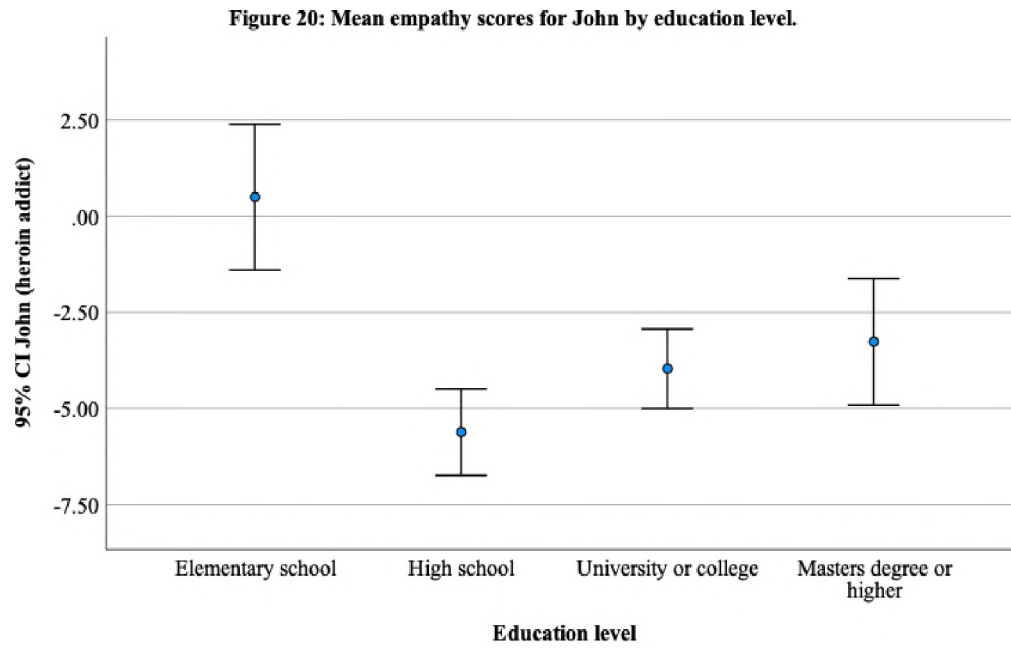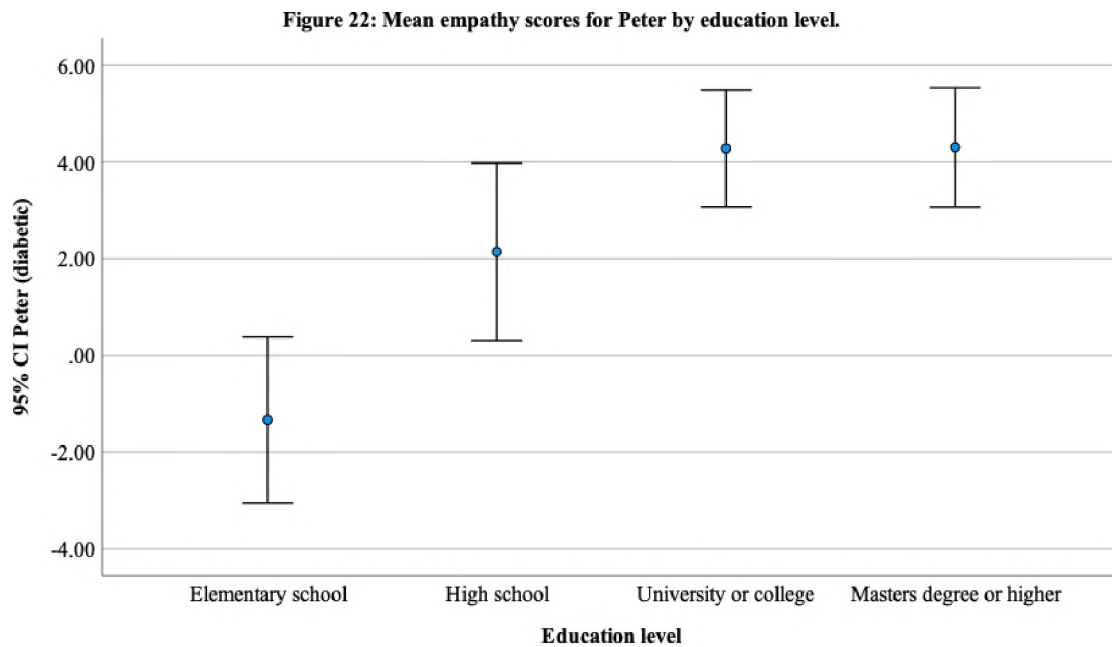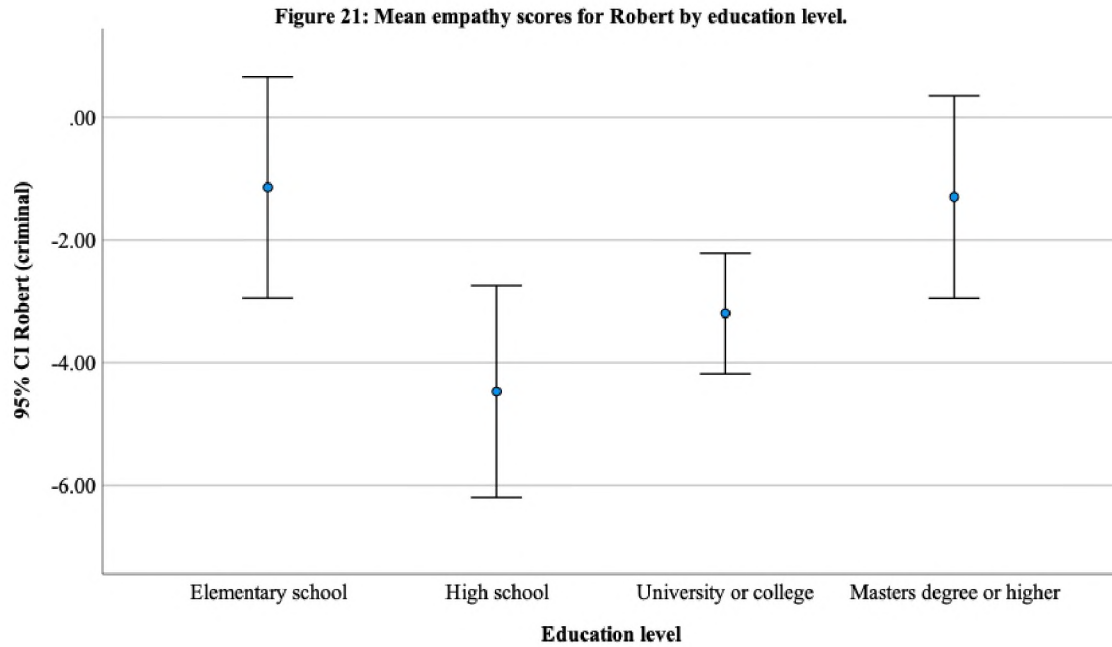**Figure 19: Scatterplot of the relationship between openness and stigma toward Harry 3.**
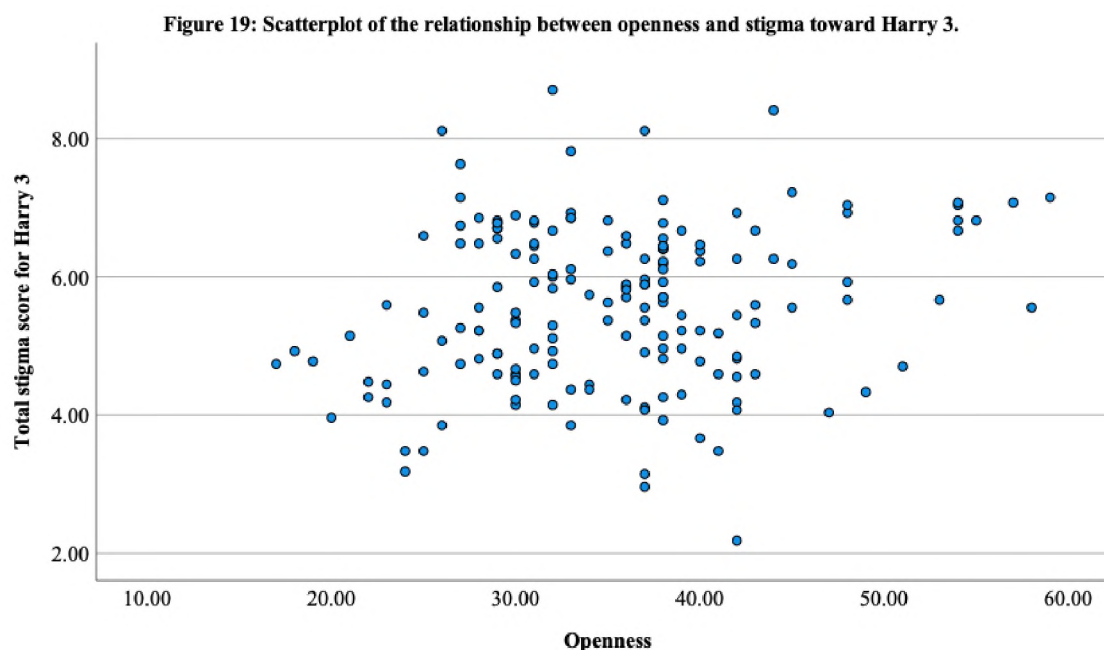
A significant correlation was not found for Harry 4, who was dangerous and responsible for the cause of his condition, r(n=153) = .12, p = .08. Therefore, when participants had a greater openness score, they showed significantly more stigma toward an individual with mental illness, unless they were responsible for their own dangerous condition. See Table 16 for Pearson correlation scores.

Additional Hypothesis Testing

A series of additional one-way ANOVAs was computed to test the additional hypothesis that empathy toward individuals with mental illness, as measured by the AMIQ and the AQ-27, would be positively related to one's highest level of education completed. Using the AMIQ, a significant result was found, with greater empathy found in more highly educated participants for

the following vignettes: John, who injects heroin daily, $F_{(3, 108)} = 6.36$, $p = <.001$; Robert, a convicted criminal, $F_{(3, 91)} = 3.44$, $p = .02$; and Peter, a diabetic, $F_{(3, 99)} = 5.45$, $p = .00$.

Figure 20: Mean empathy scores for John by education level.

Figure 21: Mean empathy scores for Robert by education level.

Figure 22: Mean empathy scores for Peter by education level.

Using the AQ-27, a significant result was found for two vignettes: Harry 1 (no danger), F $(3,158) = 11.93$, p = <.001; and Harry 2 (danger), F $(3, 129) = 4.33$, p = .01.

Figure 23: Mean stigma scores for Harry 1 by education level.
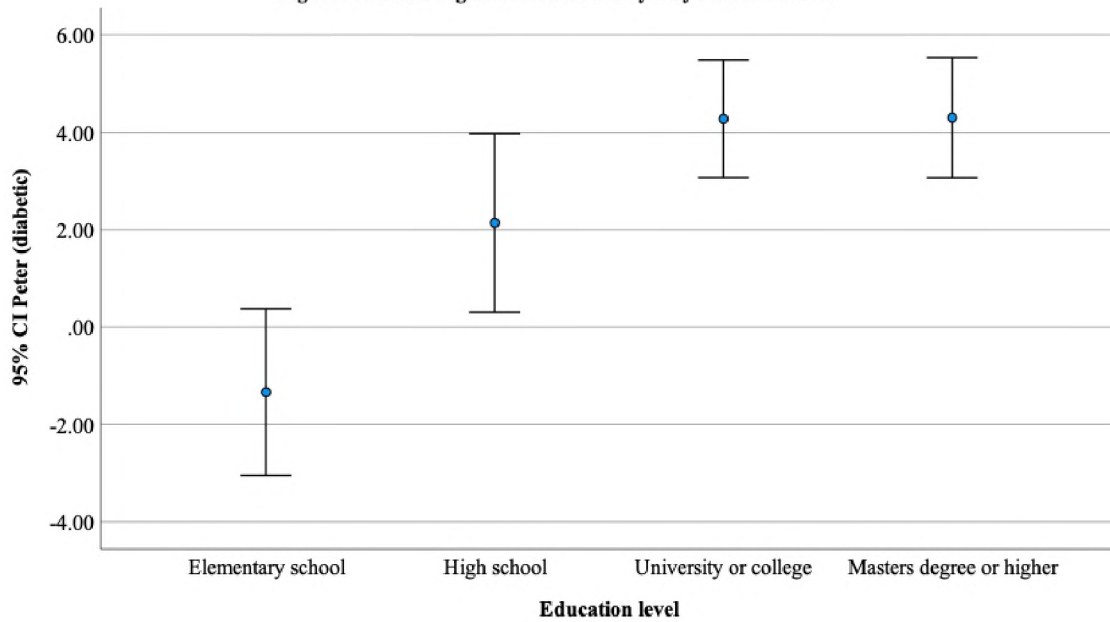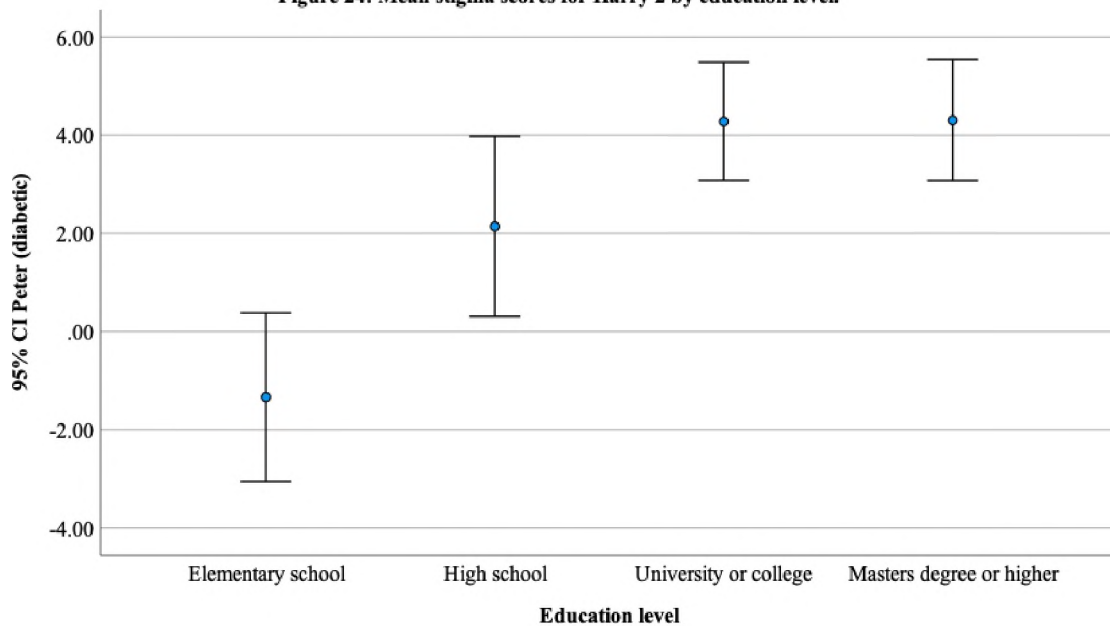

Figure 24: Mean stigma scores for Harry 2 by education level.

Discussion

The aim of this study was to investigate the relationship between empathy toward individuals with mental illness and age, gender, familiarity with mental illness, and the personality trait of openness. Four primary hypotheses were tested: (1) Empathy toward

individuals with mental illness would be related to age, with higher empathy noted in the youth and young adult age groups compared to older adults; (2) empathy toward individuals with mental illness would be related to gender, with females showing higher empathy than males; (3) empathy toward individuals with mental illness would be positively related to familiarity with mental illness; and (4) empathy toward individuals with mental illness would be positively related to openness. The strongest associations with empathy toward individuals with mental illness found in the present study were found between empathy toward individuals with mental illness and level of familiarity with mental illness.

Empathy Toward Individuals with Mental Illness and Age

The first hypothesis of this study suggested that empathy toward individuals with mental illness would be related to age, with higher empathy predicted in the youth and young adult age groups compared to older adults. Youth participants (18 and younger) were excluded from these analyses because there were too few participants in this age category.

The present study's results were moderately supportive of this hypothesis. A significant relationship was found with the AMIQ which suggests that older adults show significantly more empathy than younger adults toward convicted criminals and diabetics. Significant relationships were not found between individuals with higher openness scores and heroin addicts, individuals who self-harm, recovering alcoholic, schizophrenics, and the control condition, and therefore no significant relationship was found between age and empathy toward individuals with mental illness.

A significant relationship was found with the AQ-27, suggesting that young adults show greater stigma toward mentally ill individuals with dangerous symptoms, regardless of their

responsibility for their condition. Consistently, the middle-aged adults showed less stigma than the young adults, and the older adults showed less stigma than the middle-aged adults.

The results from the AQ-27 suggest a negative relationship between age and empathy toward individuals with mental illness. This finding contradicts previous research by Wahl (2002), who noted a positive relationship between stigmatisation and age: older individuals had greater levels of stigma. Dorris et al. (2022) attempted to specify these differences in their research, finding a nonlinear empathic development throughout the lifespan, peaking at 35 to 55 years, and slowly declining between 55 and 75 years. This curvilinear relationship was not evident in the present study, however this could be due to the insufficient youth data.

A possible explanation for the difference in empathy by age category could be a decrease in the level of openness as one ages. This possibility is derived from research conducted by Donnellan & Lucas (2008) found a negative relationship between openness and age: as individuals aged, their openness scores decreased. In simpler terms, as individuals age, they become less open and more avoidant to situations with which they are less familiar.

Baral et al. (2022) suggest that the age discrepancy related to empathy toward individuals with mental illness is a consequence of previous generations' perceptions of inferiority of mentally ill individuals, and the routine avoidance of the existence of these issues. As well, the cliché religious and cultural "remedies" that were passed on from past generations to deal with personal distress still exist within these groups today. Another possibility for the generational gap may be young people's newfound easy access to scientific information through the internet, providing them education about mental illness and easy access to helpful resources.

It is unclear why these two scales (the AMIQ and the AQ-27) yielded such different results. A possibility for these differences involves a discrepancy between the two measurement

scales, with the AQ-27 assessing the element of danger, which was not specifically assessed in the AMIQ. Another possibility may be related to the fact that the AMIQ assessed for empathy toward a broader array of conditions, including mental illness, and therefore an insufficient amount of information was acquired specifically about participants' empathy toward individuals with mental illness. A third possibility may actually be related to familiarity, with certain conditions being more familiar to younger people (e.g. self-harm) and others being more familiar to older participants (e.g. diabetes). This skew in familiarity by age may similarly result in a skew in empathy representation.

Empathy Toward Individuals with Mental Illness and Gender

The second hypothesis of this study suggested a significant positive relationship between empathy toward individuals with mental illness and gender, with higher empathy predicted for females. This hypothesis was inspired by research conducted by DuPont-Reyes et al. (2020), Dorris et al. (2022), and Sommerlad et al. (2021), who all found evidence that females show greater empathic concern toward mentally ill persons than males.

The present study's results were moderately supportive of this hypothesis. Using the AMIQ, no significant relationships were found for any of the vignettes. However, a significant relationship was found between gender scores on the AQ-27, with females showing less stigma than males in the control condition: a mentally ill individual who is not dangerous. A significant relationship between empathy toward individuals with mental illness and the female gender was not found for any conditions involving danger. Therefore, female participants showed significantly less stigma than males when Harry was not dangerous, but did not show significantly less stigma than males when Harry was dangerous, regardless of his own

responsibility for his condition. However, stigma scores were slightly lower in females when Harry was not responsible for his condition.

The AQ-27 results may also suggest that the significant differences between genders may actually be related more to a perceived threat of danger than to stigma toward mental illness, a conclusion which, to my knowledge, has not been investigated in other studies. Although the AQ-27 presents vignettes which explicitly vary in dangerousness, it is worth noting, however, that mentally ill individuals are generally no more dangerous than the general public. According to the Substance Abuse and Mental Health Services Administration (SAMHSA) (2003), only three to five percent of violent acts can be attributed to those with severe mental illnesses; rather, mentally ill individuals are generally highly valuable members of society and are more likely to be victims of violence than perpetrators. The threat of potential danger, however, may deter females from their regular empathic concern and action.

A report published by Statistics Canada (Cotter & Savage, 2019) found that one-third of women, as opposed to one-eighth of men, feel unsafe or uncomfortable in public spaces as a result of another's behaviour. Additionally, 32 percent of Canadian women aged 15 or older had experienced some form of unwanted sexual behaviour in public in the 12 months prior to the survey, while the incidence for men was approximately 13 percent. Not only do these events occur more frequently for women, but their impacts and emotional consequences are greater and cause more changes in daily routines (Cotter & Savage, 2019). Therefore, as stated by Macmillian et al. (2000), "the argument that experiences with harassment could account for gender differences in fear seems logical considering the high prevalence of stranger harassment and its strong effects on perceptions of safety, as well as the fact that sexual and stranger harassment are essentially female experiences (p. 320).

Empathy Toward Individuals with Mental Illness and Familiarity with Mental Illness

The third hypothesis of this study suggested that empathy toward individuals with mental illness would be positively related to familiarity with mental illness. The present study's results were overall supportive of this hypothesis. A significant relationship was found with the AMIQ suggesting that those with greater familiarity with mental illness show greater empathy toward Tim, who overdosed and self-harmed; Steve, a recovering alcoholic; Peter, a diabetic; and Will, the control condition. Significant relationships were not found between individuals with higher openness scores and John, a heroin addict; Robert, a convicted criminal; or Michael, a schizophrenic. A significant relationship was also found with the AQ-27 suggesting that those with greater familiarity with mental illness show greater empathy toward all individuals with mental illness, regardless of level of dangerousness or the individual's responsibility for their condition. Both results evidence a strong relationship between familiarity with mental illness and empathy toward individuals with mental illness.

The current finding supports previous research conducted by Corrigan and Nieweglowski (2019) and Corrigan et al. (2001), who observed this same positive relationship, with individuals more familiar with mental illness being more likely to endorse destigmatising and non prejudicial attitudes toward individuals with mental illness. Interestingly, within the AMIQ results, participants with greater familiarity with mental illness showed more empathy toward an individual with no condition. This finding suggests that individuals who are more familiar with mental illness are more empathetic toward all persons. To my knowledge, this question has not been investigated by researchers.

Empathy Toward Individuals with Mental Illness and Openness

The fourth and final hypothesis of this study suggested that greater empathy toward individuals with mental illness would be noted in individuals with higher openness scores. A significant relationship was found with the AMIQ, suggesting that those with higher openness scores show greater stigma toward heroin addicts, individuals who overdose and self-harm, recovering alcoholics, and convicted criminals. Significant relationships were not found between individuals with higher openness scores and those diagnosed with diabetes, schizophrenia, and the no condition. These results suggest that higher openness is related to greater empathy toward some individuals with mental illness and other conditions, but not all.

A more significant relationship was found with the AQ-27, suggesting that those with higher openness scores show greater stigma toward all individuals with mental illness, regardless of dangerousness, unless they are responsible for their condition. These results strongly suggest that higher openness is related to greater stigma toward individuals with mental illness.

None of the current study's findings supported the initial hypothesis, but rather contradicted it. The findings also contradict previous research by Sommerlad et al. (2021) and Widiger (2015), among others, who found strong relationships between openness, perspective-taking, and higher empathic concern. A possible explanation for these surprising results may be due to the fact that the openness measurement tool used in the present study (the ABOS) more specifically assessed openness toward other cultures and ethnicities. Perhaps the inconsistency in the theme of mental illness skewed the results. Another possibility is that participants over-reported in their openness self-assessment, therefore providing inaccurate results.

Strengths and Limitations

This study's strengths include the large sample size and the use of multiple measures for empathy toward individuals with mental illness. While the present study provides valuable insights into the relationship between age, gender, familiarity with mental illness, and openness with empathy toward individuals with mental illness, there are undoubtedly some limitations to be acknowledged. These limitations include the low reliability of the AMIQ scale, an under-representation of the youngest (18 and younger) and oldest (71 and older) age groups, and an over-representation of young adults (19-30). Additionally, all self-report assessments of empathy are potentially susceptible to the social desirability bias and may not accurately reflect attitudes or stigmatisation. An observational and/or experimental method may address this limitation.

Further, the current study focused on a specific collection of variables, but did not address other potential factors which may influence those variables or other causal possibilities. For example, a person's age may influence their level of openness, or a person's level of empathy may influence their desire to become more familiar with mental illness.

Considerations for Future Research

In an effort to increase knowledge and understanding of the relationships between empathy toward individuals with mental illness and age, gender, familiarity with mental illness, and openness, several directions for future research can be explored. Firstly, replication of the current study is essential to ensure the validity and reliability of its findings. Replication studies can be conducted with more diverse populations and larger samples to confirm or refute the current study's results and to strengthen the generalizability of the findings. This replication would provide a more comprehensive understanding of the relationship between these variables.

Secondly, future research could explore external factors which may influence these variables, or they could explore how the variables in the present study influence each other. For example, it would be interesting to specifically explore the relationships between age and openness in relation to empathy.

Thirdly, since a relationship was found in the current study between familiarity with mental illness and empathy toward an individual with no condition, it would be interesting to explore the question of whether familiarity with mental illness causes greater empathy toward all individuals. Alternatively, it may be possible that higher empathy leads to one being more familiar with mental illness.

Fourthly, future research could explore in more detail the relationships between familiarity with mental illness and openness with empathy toward individuals with mental illness, including an investigation of the relationship between familiarity and openness using an openness scale more related to the theme of mental illness.

Fifthly, it could be interesting to explore further the relationship between perceived danger of an individual and empathy shown and felt toward them. According to the present study's results, it is possible that perceived danger restricts empathic concern and action, particularly for females.

Finally, to further understand the extent to which familiarity with mental illness influences empathy toward individuals with mental illness, future research could involve a test-retest experimental design. With this design, participants could complete empathy scales before and after a mental health educational session.

In conclusion, future research will be valuable to build on the findings of the current study to provide a more comprehensive understanding of the variables influencing empathy

toward individuals with mental illness. The concept of empathy is complex and multifaceted with a great amount of subjectivity involved, leaving much room for further investigation. This topic is worth being more clearly understood, especially in light of the increase in discussions about mental illness and the increased number of individuals who receive diagnoses in recent times. Using the knowledge collected from these initiatives, society can be encouraged toward greater understanding and less stigma toward individuals with mental illness, resulting in a more accepting and informed world which provides equal opportunity for all individuals.

References

Baral, S. P., Prasad, P., & Raghuvamshi, G. (2022). Mental health awareness and generation gap. *Indian Journal of Psychiatry, 64*(Suppl 3), S636. https://doi.org/10.4103/0019-5545.341859

Brohan, E., Slade, M., Clement, S., & Thornicroft, G. (2010). Experiences of mental illness stigma, prejudice and discrimination: a review of measures. *Bmc Health Services Research, 10*(1), 1–11. https://doi.org/10.1186/1472-6963-10-80

Caligiuri, P. M., Jacobs, R. R., & Farr, J. L. (2000). The attitudinal and behavioral openness scale: Scale development and construct validation. *International Journal of Intercultural Relations, 24*(1), 27–46.

Catalano, L. T., Brown, C. H., Lucksted, A., Hack, S. M., & Drapalski, A. L. (2021). Support for the social-cognitive model of internalised stigma in serious mental illness. *Journal of Psychiatric Research, 137*, 41-47. https://doi.org/10.1016/j.jpsychires.2021.02.014

Corrigan, P. (2004). How stigma interferes with mental health care. *American Psychologist, 59*, 614 – 625. http://dx.doi.org/10.1037/0003-066X .59.7.614

Corrigan, P. W., Edwards, A. B., Green, A., Diwan, S. L., & Penn, D. L. (2001). Prejudice, social distance, and familiarity with mental illness. *Schizophrenia Bulletin, 27*(2), 219–225.

Corrigan, P., Markowitz, F. E., Watson, A., Rowan, D., & Kubiak, M. A. (2003). An attribution model of public discrimination towards persons with mental illness. *Journal of Health and Social Behavior, 44*(2), 162–179. https://doi.org/10.2307/1519806

Corrigan, P. W., & Nieweglowski, K. (2019). How does familiarity impact the stigma of mental illness? *Clinical Psychology Review, 70*, 40-50. https://doi.org/10.1016/j.cpr.2019.02.001

Corrigan, P. W., Watson, A. C., Otey, E., Westbrook, A. L., Gardner, A. L., Lamb, T. A., &
Fenton, W. S. (2007). How do children stigmatize people with mental illness? *Journal of
Applied Social Psychology, 37*(7), 1405–1417.
https://doi.org/10.1111/j.1559-1816.2007.00218.x

Cotter, A., & Savage, L. (2019) Gender-based violence and unwanted sexual behaviour in
Canada, 2018: Initial findings from the Survey of Safety in Public and Private Spaces
(Report No. 85-002-X201900100017). Statistics Canada.
https://www150.statcan.gc.ca/n1/en/catalogue/85-002-X201900100017

Cunningham, J. A., Sobell, L. C. & Chow, V. M. C. (1993) What's in a label? The effects of
substance types and labels on treatment considerations and stigma. *Journal of Studies on
Alcohol, 54*, 693–699.

Donnellan, M. B., & Lucas, R. E. (2008). Age differences in the Big Five across the life span:
evidence from two national samples. *Psychology and aging, 23*(3), 558–566.
https://doi.org/10.1037/a0012897

Dorris, L., Young, D., Barlow, J., Byrne, K., & Hoyle, R. (2022). Cognitive empathy across the
lifespan. *Developmental Medicine & Child Neurology, 64*(12), 1524–1531.
https://doi.org/10.1111/dmcn.15263

DuPont-Reyes, M. J., Villatoro, A. P., Phelan, J. C., Painter, K., & Link, B. G. (2020).
Adolescent views of mental illness stigma: An intersectional lens. *American Journal of
Orthopsychiatry, 90*(2), 201–211. https://doi.org/10.1037/ort0000425

Ferrie, J., Miller, H., & Hunter, S. C. (2020). Psychosocial outcomes of mental illness stigma in
children and adolescents: A mixed-methods systematic review. *Children and Youth
Services Review, 113*, 104961. https://doi.org/10/1016/j.childyouth.2020.104961

Fung, L. & Durand, RB. (2014). Personality Traits. *Acta Psychiatrica Scandinavica, 49*(244), 115-118. doi:10.1002/9781118813454.ch6

Holmes, E. P., Corrigan, P. W., Williams, P., Canar, J., & Kubiak, M. A. (1999). Changing attitudes about schizophrenia. *Schizophrenia Bulletin, 25*(3), 447–456. https://doi.org/10.1093/oxfordjournals.schbul.a033392

Klik, K. A., Williams, S. L., & Reynolds, K. J. (2019). Toward understanding mental illness stigma and help-seeking: A social identity perspective. *Social Science & Medicine, 222*, 35-43. https://doi.org/10.1016/j.socscimed.2018.12.001

Koivisto, M., Virkkala, M., Puustinen, M., Aarnio, J. (2023). Open and empathic personalities see two things at the same time: the relationship of big-five personality traits and cognitive empathy with mixed percepts during binocular rivalry. *Current Psychology, 42*, 9552-9562. https://doi.org/10.1007/s12144-021-02249-7

Luty, J., Fekadu, D., Umoh, O., & Gallagher, J. (2006). Validation of a short instrument to measure stigmatised attitudes towards mental illness. *Psychiatric Bulletin, 30*(7), 257-260. doi:10.1192/pb.30.7.257

Macmillian, R., Nierobisz, A., & Welsh, S. (2000). Experiencing the Streets: Harassment and Perceptions of Safety among Women. Journal of Research in Crime and Delinquency, 37(3), 306-322. https://doi.org/10.1177/0022427800037003003

McCrae, R. R, & Costa, P. T, Jr. (1985). Openness to experience. In R. Hogan & W H. Jones (Eds.), *Perspectives in personality* (Vol. 1, pp. 145-172). Greenwich, CT: JAI Press.

McCrae, R. R., & Costa, P. T., Jr. (1997). Conceptions and correlates of Openness to Experience. In R. Hogan, J. A. Johnson, & S. R. Briggs (Eds.), *Handbook of personality psychology* (pp. 825–847). Orlando, FL: Academic Press.

O'Driscoll, C., Heary, C., Hennessy, E., & McKeague, L. (2012). Explicit and implicit stigma towards peers with mental health problems in childhood and adolescence. *Journal of Child Psychology and Psychiatry, 53*(10), 1054-1062. https://doi.org/10.1111/j.1469-7610.2012.02580.

Pinto, M. D., Hickman, R., Logsdon, M. C., & Burant, C. (2012). Psychometric evaluation of the revised attribution questionnaire (R-AQ) to measure mental illness stigma in adolescents. *Journal of Nursing Measurement, 20*(1), 47–58. https://doi.org/10.1891/1061-3749.20.1.47

Potash, J. S., Ho, R. T. H., Chick, J. K. Y., & Au Yeung, F. S. W. (2013). Viewing and engaging in an art therapy exhibit by people living with mental illness: Implications for empathy and social change. *Public Health, 127*(8), 735–744. https://doi.org/10.1016/j.puhe.2013.05.004

Sommerlad, A., Huntley, J., Livingston, G., Rankin, K. P., Fancourt, D., & Pikhart, M. (2021). Empathy and its associations with age and sociodemographic characteristics in a large uk population sample. *Plos One, 16*(9). https://doi.org/10.1371/journal.pone.0257557

Substance Abuse and Mental Health Services Administration (SAMHSA). (2023). Mental health myths and facts. Retrieved from https://www.samhsa.gov/mental-health/myths-and-facts#

Wahl, O.E. (2002). Children's views of mental illness: A review of the literature. *Psychiatric Rehabilitation Skills, 6,* 134– 158.

Wan, S., Lin, S., Yirimuwen, Li, S., & Qin, G. (2023). The relationship between teacher-student relationship and adolescence emotional intelligence: A chain-mediated mediation model of openness and empathy. *Psychology Research and Behavior Management,* 1343-1354.

Widiger, T. A. (2015). *The Oxford Handbook of the Five factor model.* Oxford University Press.

Appendix A
Informed Consent

Consent to Participate in the Study

The Relationship Between Empathy Toward Individuals with Mental Illness and Age, Gender, Familiarity, and Openness

September 2023 – April 2024

You are being invited to participate in this research study. Please carefully read the following information below and confirm your consent before you participate in this study.

Conducted by	Noelle Jaster Principal Researcher Tyndale University, Department of Psychology
Contact information:	jasternoelle@mytyndale.ca
Under the supervision of For the course	Dr. Vivette Henry PSYC 497-499 Honours Thesis in Psychology
Approved by	Tyndale's Research Ethics Board (reb@tyndale.ca)

I understand that I am invited to participate in the research study named above. This study is intended to explore the effects of one's age, gender, openness, and familiarity with mental illness with their level of empathy toward individuals with mental illnesses. By signing this form in the space provided at the end, I indicate my agreement to participate in the study.

What Will Participation Involve?
Participation will consist of the completion of five online evaluations and questionnaires on the SurveyMonkey.com platform in an estimated time frame of 30 minutes: the Attitudinal and Behavioural Openness Scale (ABOS; approx. 7 minutes), the Level-of-Contact (LOC) Report (approx. 3 minutes), the Attitudes to Mental Illness Questionnaire (AMIQ; approx. 5 minutes), the Attribution Questionnaire (AQ-27; approx. 10 minutes) and a demographics survey (approx. 5 minutes). The survey will open on November 8, 2023, and close on December 13, 2023.

Are There Significant Risks?
The researcher ensures that participation in this study will not expose participants to more risk than one would encounter in regular activities.

What Benefits Will My Participation Bring?
This study will benefit participants by providing the opportunity to learn more about one's own unconscious biases and traits, while also learning about some of the realities for individuals with mental illness. Society at large will have a better understanding of the factors that affect empathy across different age groups. Additionally, it is hoped that this study brings into awareness the current stigmatisation of mental illness in an attempt to lessen it.

Society at large will have a better understanding of the factors that affect empathy across different generations.

Will the Information I Share Be Kept Confidential?
The researcher ensures that the information shared by participants will remain strictly confidential. The contents will be used only for data collection and analysis. Data collected from or about participants will not be shared with other researchers or re-used in other research projects unless participants provide their consent. In order to maintain confidentiality regarding participants' identities and personal information, the researchers will replace identifiable information with coding after data collection is completed.

In order to minimise the risk of security breaches and to ensure overall security of your identity and personal information, it is recommended that participants use standard safety measures such as signing out of their account, closing their browser and locking their screen or device when no longer using them/ when the study has been completed.

Will My Identity Remain Anonymous?
Anonymity cannot be guaranteed, as participant compensation relies on name submission. However, the participant's identity will not be known to other participants nor will it be revealed in presentation and publication. Therefore, confidentiality will be maintained.

What Will Happen to the Records of My Participation?
The data collected will be stored indefinitely as an electronic data file on a password-protected computer. The records will only be accessible by the principal researcher and thesis supervisor.

Will I Receive Any Compensation?
Participants will be compensated for their time and efforts with their choice of 1% extra credit in any Tyndale University Psychology course of their choosing, in which they are currently

enrolled, or an entry into a draw for a $25 Amazon gift card. Participants will not be penalised and will still receive compensation should they choose to withdraw from the study at any time.

Is My Participation Totally Voluntary?

Individuals are under no obligation to participate in this study. There will be no penalty if one chooses not to participate, nor will they lose any benefits to which they are otherwise entitled. If one chooses to participate, <u>individuals can withdraw from the study at any time</u> and/or refuse to answer any questions without suffering any negative consequences. Individuals who choose to participate in this research have not waived any legal rights.

Consent to Participate

I have read and understood the above information and I freely consent to participate in this research study by signing in the space provided below.

If I have any further questions about the study, I may at any stage contact the researcher or study supervisor.

This study has been reviewed and approved by the Research Ethics Board of Tyndale University. If I have any questions regarding the ethical conduct of this study or my rights as a participant, I may contact the Research Ethics Board at reb@tyndale.ca.

Participant's signature: _____   Date: _____

Parent/Guardian's signature: _____   Date: _____
Required for all participants under 18

Consent for Re-use of Study Data *(Optional)*

I also freely consent for the study researchers permission to re-use the data collected from me during this study in future research projects. I understand that this may extend to sharing my study data with other researchers involved in other studies. This consent does not include permission for the sale or reuse of my study data for non-research or commercial purposes. This data will still be encoded, no personal identifying information will be attached, and confidentiality will be maintained.

Participant's signature_____   Date_____

Parent/Guardian's signature: _____   Date: _____
Required for all participants under 18

Appendix B
Attitudinal and Behavioural Openness Scale (ABOS)

PART ONE					
Please rate your level of agreement with the following statements	Completely Disagree (0)	Slightly Disagree (1)	Neither Agree nor Disagree (2)	Slightly Agree (3)	Completely Agree (4)
To have a culturally diverse workforce is a positive goal for organisations.					
Foreign language skills should be taught to children in elementary school.					
Travelling the world is a priority in my life.					
Other cultures fascinate me.					
It would be a good experience to host a foreign exchange student.					
PART TWO					
Please rate the frequency with which you do the following things	Never (0)	Rarely (1)	Sometimes (2)	Often (3)	Frequently (4)
When in my home state or country, I eat foods from a variety of countries.					
When in my home state or country, I attend or download foreign films.					
When in my home country, I read [about] events from around the world.					
When in my home state or country, I attend museums, theatre & concerts.					
When in my own state or country, I attend festivals of other nations or ethnic groups.					
I visit parks & historic sites of states or regions within my home country.					
PART THREE					
Please rate the extent to which the following statements describe your friends	Very similar to mine (0)	Mostly similar to mine (1)	Somewhat different than mine (2)	Different than mine (3)	Extremely different than mine (4)

In general, my friends' interests and hobbies are…					
In general, my friends' national or ethnic origins are…					
In general, my friends' religious backgrounds are…					
In general, my friends' career aspirations are…					
In general, my friends' first languages are…					

.

Appendix C
Level-of-Contact (LOC) Report

Please read each of the following statements carefully. After you have read all the statements below, place a check by the statements that best depict your exposure to persons with a mental illness.

(3)	I have watched a movie or television show in which a character depicted a person with mental illness.
(8)	My job involves providing services/treatment for persons with a mental illness.
(2)	I have observed, in passing, a person I believe may have had a mental illness.
(5)	I have observed persons with a mental illness on a frequent basis.
(12)	I have a mental illness.
(6)	I have worked with a person who had a mental illness at my place of employment [or education institution].
(1)	I have never observed a person that I was aware had a mental illness.
(7)	My job includes providing services to persons with a mental illness.
(9)	A friend of the family has a mental illness.
(10)	I have a relative who has a mental illness.
(4)	I have watched a documentary on the television about mental illness.
(11)	I live with a person who has a mental illness.

Appendix D
Attitudes to Mental Illness Questionnaire (AMIQ)

Please read the following statement: [chosen vignette from below]. Please indicate the answer which best reflects your views:

1. Do you think that this would damage John's career?

   Strongly Agree^{-2} / Agree^{-1} / Neutral^{0} / Disagree^{+1} / Strongly Disagree^{+2} / Don't Know^{0}

2. I would be comfortable if John was my colleague at work.

   Strongly Agree^{-2} / Agree^{-1} / Neutral^{0} / Disagree^{+1} / Strongly Disagree^{+2} / Don't Know^{0}

3. I would be comfortable about inviting John to a dinner party.

   Strongly Agree^{-2} / Agree^{-1} / Neutral^{0} / Disagree^{+1} / Strongly Disagree^{+2} / Don't Know^{0}

4. How likely do you think it would be for John's wife to leave him?

   Very Likely^{-2} / Quite Likely^{-1} / Neutral^{0} / Unlikely^{+1} / Very Unlikely^{+2} / Don't Know^{0}

5. How likely do you think it would be for John to get in trouble with the law?

   Very Likely^{-2} / Quite Likely^{-1} / Neutral^{0} / Unlikely^{+1} / Very Unlikely^{+2} / Don't Know^{0}

Vignette Options

1. John has been injecting heroin daily for 1 year.
2. Tim is depressed and took a paracetamol overdose last month to try and hurt himself.
3. Steve has been drinking heavily for 5 years. He is now going for treatment and has started attending Alcoholics Anonymous meetings.
4. Robert is a convicted criminal. He has spent time in prison for several convictions for theft and shoplifting and is currently on bail for fraud and burglary.
5. Peter has diabetes. He needs to inject insulin every day and has a special diet.
6. Michael has schizophrenia. He needs an injection of medication every 2 weeks. He was detained in a hospital for several weeks 2 years ago because he was hearing voices and thought he had the power to cause earthquakes. He has been detained under the Mental Health Act 1983 in the past.
7. Will is a practising Christian. He attends church every Sunday and attempts to lead a Christian life.

Appendix E
Attribution Questionnaire-27 (AQ-27)

Answer each of the following questions about Harry. Indicate the number of the best answer to each question.

1. I would feel aggravated by Harry. (1 = not at all; 9 = very much)
2. Harry would terrify me. (1 = not at all; 9 = very much)
3. How angry would you feel at Harry? (1 = not at all; 9 = very much)
4. If I were in charge of Harry's treatment, I would require him to take his medication. (1 = not at all; 9 = very much)
5. I think Harry poses a risk to his neighbours unless he is hospitalised. (1 = not at all; 9 = very much)
6. If I were an employer, I would interview Harry for a job. (1 = not likely; 9 = very likely)
7. I would be willing to talk to Harry about his problems. (1 = not at all; 9 = very much)
8. I would feel pity for Harry. (1 = not at all; 9 = very much)
9. I would think that it was Harry's own fault that he is in the present condition. (1 = not at all; 9 = very much)
10. How controllable, do you think, is the cause of Harry's present condition? (1 = not at all; 9 = very much)
11. How irritated would you feel by Harry? (1 = not at all; 9 = very much)
12. How much do you agree that Harry should be forced into treatment with his doctor even if he does not want to? (1 = not at all; 9 = very much)
13. I think it would be best for Harry's community if he were put away in a psychiatric hospital. (1 = not at all; 9 = very much)
14. I would share a carpool with Harry every day. (1 = not likely; 9 = very likely)
15. How much do you think an asylum, where Harry can be kept away from his neighbours, is the best place for him? (1 = not at all; 9 = very much)
16. How scared of Harry would you feel? (1 = not at all; 9 = very much)
17. How likely is it that you would help Harry? (1 = not likely; 9 = very likely).
18. How certain would you feel that you would help Harry? (1 = not at all; 9 = very much)
19. How much sympathy would you feel for Harry? (1 = none at all; 9 = very much)
20. How responsible, do you think, is Harry for his present condition? (1 = not at all; very much)
21. How frightened of Harry would you feel? (1 = not at all; 9 = very much)
22. If I were in charge of Harry's treatment, I would force him to live in a group home. (1 = not at all; 9 = very much)
23. If I were a landlord, I probably would rent an apartment to Harry. (1 = not likely; 9 = very likely)
24. How much concern would you feel for Harry? (1 = none at all; 9 = very much)

Vignettes – Participants were randomly assigned to read vignettes.

1. *No Danger* – Harry is a 30 year old single man with schizophrenia. Although he sometimes hears voices and becomes upset, Harry has never been violent. Like most people with schizophrenia, Harry is no more dangerous than the average person. He lives in an apartment and works as a clerk in a large law firm. His symptoms are usually well managed with the appropriate medication.

2. *Danger* – Harry is a 30 year old single man with schizophrenia. The last time his symptoms got worse, he heard voices and believed his neighbours were planning to hurt him. He attacked his landlady in the belief that she was in on a plot. When the police escorted him to the hospital, he tried to grab for the officer's gun. He attacked an orderly in the emergency room and had to be put into restraints. He only quieted down after he was given large doses of medication.

3. *Danger Without Controllability of Cause* – Harry is a 30 year old single man with schizophrenia. The last time his symptoms got worse, he heard voices and believed his neighbours were planning to hurt him. He attacked his landlady in the belief that she was in on a plot. When the police escorted him to the hospital, he tried to grab for the officer's gun. He attacked an orderly in the emergency room and had to be put into restraints. Harry's mental illness was originally caused by a severe head injury suffered during a car accident when he was 22. The mental illness leads to violence whenever he suffers from migraines also caused by the accident.

4. *Danger With Controllability of Cause* – Harry is a 30 year old single man with schizophrenia. The last time his symptoms got worse, he heard voices and believed his neighbours were planning to hurt him. He attacked his landlady in the belief that she was in on a plot. When the police escorted him to the hospital, he tried to grab for the officer's gun. He attacked an orderly in the emergency room and had to be put into restraints. Harry's mental illness was originally caused by eight years of abusing illegal drugs. The mental illness leads to violence whenever he snorts cocaine.

Appendix F
Demographics Survey

1. **How would you describe your gender?**
   a. Male
   b. Female
   c. Other: _____

2. **What age will you be by December 31, 2023?**
   a. 18 or younger
   b. 19-30
   c. 31-50
   d. 51-70
   e. 71 or older

3. **What is the highest level of education you have completed?**
   a. Elementary school
   b. High school
   c. Bachelor's degree
   d. Master's degree
   e. Ph.D. or above
   f. Other: _____
   g. I prefer not to say

4. **What are your ethnic origins? Check all that apply.**
   a. African origins
   b. Caribbean origins
   c. European origins
   d. East Asian origins
   e. South Asian origins
   f. Hispanic or Latinx origins
   g. Middle Eastern origins
   h. Prefer not to answer
   i. First Nations, Metis, or other Indigenous origins
   j. Other (Please specify if you are able): _____

5. **What is your religion?**
   a. Protestant Christian (e.g., Christian Alliance, Baptist, Pentecostal, Free Methodist, etc.)
   b. Roman Catholic

c. Greek Orthodox
d. Russian Orthodox
e. Jewish
f. Muslim
g. Buddhist
h. Hindu
i. Atheist
j. Agnostic
k. Other: _____
l. Prefer not to say

Appendix G
Posters

PSYCHOLOGY STUDY SEEKING PARTICIPANTS

The Relationship Between Empathy Toward Individuals with Mental Illness and Age, Gender, Familiarity, and Openness

BE ENTERED INTO A DRAW FOR AN AMAZON GIFT CARD

Questions? Contact jasternoelle@mytyndale.ca