Stigma and its Reduction: The Role of Knowledge, Causal Attribution, and Mental Disorder Type

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Stigma and its Reduction: The Role of Knowledge, Causal Attribution, and Mental Disorder Type

by

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Abstract

Research has shown undeniable evidence of mental illness stigma. Stigma has been shown to reduce treatment seeking and negatively impact emotion and cognition in individuals with mental illness (Livingstone & Boyd, 2010). By discovering the driving forces behind stigma, treatment seeking and quality of life can be improved for individuals with mental illness. This study investigates the effect of knowledge, disorder type, and causal attribution on mental illness stigma. Specifically, participants were assigned to one of two conditions, knowledge or no knowledge. Knowledge conditions included information about a disorder (schizophrenia or depression, depending on disorder condition) such as definition, prevalence, symptoms, criteria for diagnosis, treatment, and common myths. The no knowledge condition lacked this information. Stigma was then measured. Stigma was measured as desired social distance from the affected individual, perceived responsibility, likeliness to help, perceived control, and perceived dangerousness. Additionally, subjects’ pre-existing causal attribution beliefs were measured by asking the extent to which subjects believed disorders arose from environmental vs. biogenetic origins. Knowledge was found to significantly reduce stigma levels for both depression and schizophrenia. Additionally, causal attribution was significantly positively associated with total stigma, with more biogenetic beliefs predicting higher stigma levels. Such results affirm the influence of knowledge and causal attribution on stigma levels and indicate variables that can be utilized in stigma reduction programs.
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Stigma is “a mark of disgrace associated with a particular circumstance, quality, or person” (Oxford Dictionary). It is also defined as “a process where an individual is marked out as different in a less desirable way and reduced to that attribute” (Holman, 2015). Within the domain of mental illness, stigma has been shown to be widespread (Parcesepe & Cabassa, 2013), influencing aspects of well-being (Kvaale, Haslam, & Gottdiener, 2013) and help seeking behaviors (Crowe, Averett, & Glass, 2016). Stigma can be understood from a combination of factors (Corrigan & Watson, 2002); stereotypes, prejudice, and discrimination. Stereotypes are stable, pervasive, and generalized beliefs about groups of individuals; in the case of mental illness, stereotypes often include the belief that every person with a mental illness is the same and is believed to hold negative qualities. Prejudice is an agreement with the stereotype, resulting in a negative emotional reaction towards someone with mental illness. Finally, discrimination is the behavior towards someone with mental illness, evoked from the emotional reaction.

These three factors combine to form stigma and can present in several different forms; self-stigma, help-seeking stigma, associative stigma, and anticipated stigma. Self-stigma occurs when a person internalizes negative attitudes towards mental illness and begins to hold those beliefs as their own. Help-seeking stigma occurs once an individual seeks treatment for their mental illness. Others learn of their illness and stigmatize them, as a result of learning about the treatment. Associative stigma involves family members or close friends being stigmatized, resulting from their connection to someone who has a mental illness. Finally, anticipated stigma is a belief that stigma will result once a person discloses their mental illness (Corrigan, 2004).
Stigma towards mental illness can be generated by others as well as oneself. When measuring stigma directed towards those with mental illness, it can be broken down into several different levels. Blame, perceived dangerousness, social distance, prognostic pessimism (Kvaale, Haslam et al., 2013), empathic concern, actual helping decisions (Lee et al., 2013), perceived responsibility, and fear (Rusch, Todd, Bodenhausen, & Corrigan, 2010) are all individual facets of stigma. These levels all interact and accumulate into stigma and its different forms. The various levels of stigma can be measured and are established as representing stigma through countless validated surveys and studies which make use of their assessment. Support for this claim comes from a review, which analyzed 401 studies and found 111 stigma measures and 35 help-seeking measures. These measures utilized various combinations of the previously stated stigma levels (Wei, McGrath, Hayden, & Kutcher, 2015).

Research indicates that the presence of stigmatizing attitudes and behaviors is pervasive (Parcesepe & Cabassa, 2013). Overwhelming support for mental illness stigma was found in the public, after researchers investigated public attitudes towards mental illness and its treatment. Higher levels of shame, blame, and punishment were associated with mental illness. Additionally, individuals with mental illness were perceived as dangerous to themselves and others. This attitude was not associated with physical health problems, was widespread among the public, and was found in numerous studies. Moreover, the perceived danger presented by the mentally ill is even greater than that perceived in people with “normal” troubles, such as sometimes feeling sad, annoyed, nervous, or worried. These “normal” troubles may also involve events such as trouble sleeping or arguments with family. The level to which participants rated mentally ill individuals as dangerous was dependent on disorder type. Individuals with drug
dependent disorders, alcohol abuse disorders, and schizophrenia were perceived as more dangerous than individuals with other disorders, such as depression.

All forms of stigma produce negative consequences. One of the largest consequences of stigma is reduced treatment seeking behaviors (Crowe et al., 2016). Since individuals fear societal stigma will surround them, hindering their reputation and social connections, they do not seek needed treatment. Stigma has also been found to negatively affect the pursuit of housing (Alisky & Iczkowski, 1990) and employment opportunities (Thornicroft, Brohan, Rose, Sartorius, & Leese, 2009). Current and future social connections are also hindered by stigma. Both children and adults report higher levels of desired social distance from individuals with mental illness than individuals with physical health concerns (Parcesepe & Cabassa, 2013). Thus, individuals with mental illness face rejection from peers and family members at the hands of stigma (Corrigan, 2004). Stigma can result in identifying individuals with mental illness as incompetent or incapable (Parcesepe & Cabassa, 2013). When stigma is internalized, it can damage emotional well-being, self-esteem, and hope (Livingston & Boyd, 2010). The presence of these negative consequences have been measured repeatedly and show the widespread impact of stigma.

Work has been done to explore the benefits of reducing stigma. Crowe and colleagues (2016), for example, investigated the relationship between mental illness stigma, resilience, and help seeking, focusing on the influence of each component on the others. Results showed participants, most of whom had previously received treatment for a mental illness, to believe a significant relationship existed between the three variables. Participants explained decreases in help seeking and resilience to be the result of stigma. However, help seeking was understood to create two different outcomes; increased stigma and lowered resilience or decreased stigma and
increased resilience. The deciding factor on which outcome would occur was attributed to the balance between an individual’s experienced stigma and their resilience level. Outcomes of the help seeking, stigma, resilience chain depended on which characteristic (stigma or resilience) was stronger. These results show the influence of stigma on treatment seeking and resilience, as well as the need for its reduction. If stigma were removed from this matrix, only help seeking and resilience would remain. By eliminating stigma, help seeking and resilience would increase, allowing for positive outcomes.

The effects of associative stigma on caregivers and relatives of individuals with mental illness have also been measured. This form of stigma causes distress and negatively impacts families. When researchers surveyed adult relatives of individuals with mental illness, they found stigma to be associated with caregiver distress, empowerment, and family functioning. When experienced stigma was higher, caregiver distress increased, while empowerment and family functioning decreased (Muralidhara, Lucksted, Medoff, Fang, & Dixon, 2014). These results show the negative impacts of stigma spreading into the family and caregiver dynamic, negatively impacting the functioning of families. Negative influences on a family dynamic can hinder resilience and recovery, prolonging mental illness, further supporting the need for a reduction of stigma.

Several factors have been shown to influence the formation and fluctuation of stigma. Some of these factors include knowledge (Milin et al., 2016), causal attribution beliefs (Parcesepe & Cabassa, 2013), urban vs. rural settlement (Stewart, Jameson, & Curtin, 2015), culture (Wong, Collins, Cerully, Yu, & Seelam, 2017), education level, neighborhood disadvantage (Gonzales, Chan, & Yanos, 2016), belief in recovery (Barczyk, 2015), and disorder type (Parcesepe & Cabassa, 2013). When considering stigma interventions, type of intervention
(Dalky, 2012) and nature of contact with a person with mental illness (Greenblatt, Pinto, Higgins, & Berg, 2016) are influencing factors upon stigma. Knowledge, causal attribution, and disorder type will be the focus of this paper since they are the variables of interest in the present study.

Knowledge

Evaluation of intervention programs has increased and researchers are continually investigating the impact of knowledge on stigma. The idea that increased knowledge significantly reduces stigma has been supported by evaluating the addition of mental health information into high school curricula (Milin et al., 2016). Stigma and knowledge levels were compared for several high schools, after some schools had mental health literacy added into their health courses. Schools that received mental health curricula tested significantly lower on stigma, with positive attitudes increasing. The same schools also reported significant increases in knowledge pertaining to mental illness. Knowledge increases significantly predicted increases in positive attitudes and decreases in stigma. Researchers concluded mental health literacy is effective in reducing stigma. Results like these offer hope in utilizing accessibility to accurate information as a way to reduce public stigma.

The link between knowledge and stigma is supported, but longer duration programs may not be feasible or efficient for some schools, organizations, or work places. However, can short knowledge interventions reduce stigma levels as effectively? More research with high schoolers shows this possibility (Ke et al., 2015). When students were exposed to a 1-hour classroom workshop involving videos of personal experience, explanations of mental illness causes, and open discussions about mental illness, stigma levels were significantly reduced. This change was illustrated by a pre- and posttest style experiment, with stigma scores decreasing by 23% from
the pre- to the posttest. Effects were still present one month after the intervention, with a 21% drop in stigma. These results show shorter knowledge interventions can impact stigma. The efficacy of shorter duration interventions proves important in the real world application of knowledge in order to reduce stigma, showing programs do not need to be lengthy to be effective.

After establishing the effectiveness of knowledge in reducing stigma, researchers have begun investigating the most effective types of intervention. A meta-analysis of school-based stigma reduction programs found that stigma levels were reduced by interventions with engaging contact (Chen, Koller, Krupa, & Stuart, 2016). Three specific constructs helped to accomplish this reduction; guest speakers, a clear message, and personal interaction. These constructs were combined to produce contact based programs, where individuals who had experienced living with a mental illness shared their stories, conveying a positive message about recovery. When contact was engaging, programs resulted in increases of knowledge, thus improving attitudes and behaviors towards individuals with mental illness and reducing stigma. Additionally, researchers found effective programs do not only utilize engaging information to reduce stigma but use specific presentation styles (Murman et al., 2014). One study found youth-initiated and youth-led programs to be especially effective when reducing stigma in adolescents. Researchers found adolescents to have significantly greater potential for anti-stigma actions after partaking in a youth-led, discussion based program. By determining the specific styles of contact necessary to significantly reduce stigmatizing behaviors, stigma reduction programs can be more impactful. Therefore, it is important to study stigma, its different levels, and specific factors that influence its reduction.
Schools are not the only organizations attempting to reduce stigma. Workplaces are implementing programs and seeing positive outcomes. A review of several stigma preventions in workplaces examined changes in knowledge, attitudes towards mental illness, and supportive behaviors (Hanisch et al., 2016). Overall, the workplace interventions resulted in improved knowledge and an increase in supportive behaviors towards those with mental illness. Effects on total stigma were mixed between the 16 reviewed studies, but were positive overall. These academic and peer-reviewed studies show that increasing knowledge can significantly reduce stigma levels, with a lasting effect. However, the size of the decrease and the duration of effects depends on the intervention style utilized, with some styles more effective than others. In particular, online interventions were not consistently effective in changing attitudes and behaviors about mental illness. However, in-person interventions, that included training and role playing, were consistently effective at improving attitudes and behaviors towards mental illness, as well as increasing knowledge.

*Causal Attribution Beliefs*

Causal attribution is another factor that has produced significant research regarding influence on stigma levels. Specific levels of stigma fluctuate depending on an individual’s belief of mental illness acquisition, stability, and innateness. The acquisition of mental illness can be understood in different ways; biogenetic (Kvaale, Haslam et al., 2013, Rusch et al, 2010, Kvaale, Gottdiener, Haslam, 2013, and Cheng, 2015), neurobiological (Rusch et al., 2010 and Cheng, 2015), or social (Cheng, 2015). A biogenetic explanation of mental illness is multifaceted, with focuses on genetics, heritability, and the brain. Neurobiological explanations are a component of biogenetic views, but are specifically focused on the brain and its physiological influence, such as the role neurotransmitters play in mental illness (Rusch et al., 2010). Finally, a social
STIGMA AND ITS REDUCTION

explanation of mental illness is not connected to biology but instead focuses on the role of social factors (environmental influences, socialization, and upbringing) in the acquisition of mental illness (Cheng, 2015). Many studies analyze the effects of these acquisition beliefs on stigma, and each causal attribution belief has an effect.

When considering a biogenetic explanation, studies have found mixed results pertaining to stigmatization. When completing a meta-analytic review, researchers found a relationship between a biogenetic explanation and three levels of stigma: blame, dangerousness, and social distance (Kvaale, Gottdiener et al., 2013). Subjects who held a biogenetic belief of mental illness blamed individuals less for their illness. However, they also perceived persons with mental illness as more dangerous and desired more social distance from them. Another study found the same result; a biogenetic explanation reduced blame but increased perceived dangerousness (Kvaale, Haslam et al., 2013). A biogenetic explanation also increased prognostic pessimism, meaning individuals holding a biogenetic attribution belief are less hopeful concerning recovery and treatment outcomes. It may seem counterintuitive for biogenetic beliefs to both increase and decrease stigma, but when stigma is considered as individual components the difference makes sense. Individuals holding a biogenetic view of mental illness link the illness to a person’s genetics, viewing it as innate and unchangeable. Believing the illness to be innate would then prompt less blame and perceived responsibility, due to an inability to change our genes. However, this belief can prompt more desires of social distance, increased perceived dangerousness, and prognostic pessimism for the same reasons, innateness and stability. Based on these findings (Kvaale, Gottdiener et al., 2013; Kvaale, Haslam et al., 2013) it is important to analyze dimensions of stigma individually as well as holistically.
Researchers have also compared resulting stigma and guilt levels based on genetic or neurobiological causal attributions. Results on a stigma survey and an implicit association task were compared for two groups, general public and mentally ill (Rusch et al., 2010). The implicit association task measured the strength of participants’ automatic thoughts and associations concerning mental illness and linked characteristics. In the general public group, those who endorsed neurobiological attribution measured lower on perceived responsibility, but higher on social distance desires. This group also presented with weaker implicit blame associations. These results are similar to those found associated with a biogenetic belief, with the idea of innateness reducing blame and perceived responsibility, while increasing social distance desires. However, the same connection was not seen in the group with mental illness. Instead, individuals with a mental illness who endorsed a neurobiological model showed strong implicit self-guilt associations. This connection could point to internalized or perceived stigma influencing individuals’ perception of themselves. From these results, researchers concluded neurobiological models of attribution have differential influence on individual levels of stigma and such explanations of mental illness can be problematic for stigma reduction.

Social attribution explanations of mental illness produce opposite results when compared to biogenetic or neurobiological explanations (Cheng, 2015). Analyses show social explanations to predict positive outcomes for stigma levels pertaining to depression. Greater willingness to help, decreased social distance desires, and decreased fear were associated with endorsing a social acquisition belief. These results were found in an Asian American sample, but social acquisition endorsement also predicted increased perception of treatability in European Americans.
In summary, causal attribution beliefs are shown to significantly impact the development and stability of mental illness stigma. Specific stigma levels, such as social distance, perceived dangerousness, fear, and perceived responsibility, have been shown to increase or decrease depending on the causal attribution belief an individual holds. Research thus highlights the importance of being careful when explaining the cause of mental illness, and the consequences that incomplete or inaccurate explanations can bring.

**Disorder Type**

While much evidence exists for the influence of knowledge and causal attribution on stigma, less information has been gathered on the effect of disorder type. Some studies have shown different mental illnesses to produce different magnitudes of stigma, across several stigma levels (Parcesepe & Cabassa, 2013). Aspects of stigma such as blame, social distance, and dangerousness are influenced by disorder type. One study showed both adults and children to have higher levels of blame for individuals with depression, when compared to individuals with schizophrenia (Parcesepe & Cabassa, 2013). Higher levels of desired social distance were reported for illnesses such as substance abuse and schizophrenia, than for other mental illnesses. Dangerousness was also reported as higher for individuals with schizophrenia and alcohol abuse disorders than those with depression. The level and type of discrimination individuals with mental illness experience is also influenced by disorder type. When considering discrimination differences based on disorder type, individuals with depression report more discrimination experience in a greater number of life areas (neighbors, dating, education, religion, etc.), while individuals with schizophrenia report more discrimination concerning police (Croker et al., 2015). Disorder type was also shown to influence perceived competency, with subjects rating individuals with schizophrenia as less competent than individuals with depression (Parcesepe &
Cabassa, 2013). The impact of disorder type on stigma may point to inaccurate representation of certain illnesses in media or entertainment and should be studied further to understand why such differences exist. Increasing the availability of accurate information on mental illnesses could reduce the effect of disorder type on stigma.

The current study aimed to determine the effects of knowledge, causal attribution, and disorder type on mental illness stigma. These variables were chosen as variables of interest based on previous findings suggesting they are important factors in contributing to the strength of people’s stigma. The current study also investigated the efficacy of a brief intervention; brief interventions have been studied previously but were highly engaging in nature, with personal testimonies, participation in activities, and in-person presentations. The knowledge intervention in this study is unique in that it will be very brief, a few minutes at most, and does not include directly engaging tactics. Determining if a short intervention of this nature is successful in reducing stigma is important for stigma reduction program planning and implementation, with cost saving capabilities and universal application ability. Knowledge and disorder type were manipulated variables, while causal attribution was used as a subject variable. Knowledge was a between-subjects variables; subjects either received a page of information about a specific mental illness or they did not. This knowledge page consisted of information on disorder definition, prevalence, age of onset, gender differences, symptoms, criteria for diagnosis, treatment, and common myths. Disorder type was also a between-subjects variable; subjects were placed in a depression or schizophrenia condition. Stigma was measured on the levels of social distance, perceived responsibility, likeliness to help, perceived control, and perceived dangerousness. Finally, participants’ pre-existing causal attribution beliefs were measured based on self-report on an established biogenetic attribution scale (Haslam, Bastian, & Bissett, 2004).
Because causal attribution has been shown to be an important individual difference, it was included as a covariate in the data analysis.

It was expected that exposure to specific knowledge about a mental illness would produce lower levels of stigma. When comparing stigma levels towards depression and schizophrenia, schizophrenia was expected to produce higher levels of stigma. It was also expected that individuals who held a more biogenetic view of mental illness would report lower levels of stigma in the areas of perceived responsibility and perceived control. However, it was expected that a biogenetic view would result in higher reported social distance, likeliness to help, and perceived dangerousness.

**Method**

**Participants**

Participants included 108 adults (male \( n = 58 \), female \( n = 49 \), choose not to respond \( n = 1 \)). Participants were recruited from the online platform Amazon Mechanical Turk (MTurk), utilized as a crowdsourcing marketplace. The mean age of participants was 35 years old (range: 19-70). The majority of the sample was Caucasian (79%), with 10% Asian, 6% African American, and less than 4% American Indian and Pacific Islander. An additional 88 persons participated in the study, however, their data were not included in analysis for a variety of reasons; failed to complete the study (20), did not sign consent form correctly (10), completed the survey in less than 215 seconds (25), had a latitude or longitude outside the US (25), or missed two or more knowledge check questions (8). The survey duration cutoff was determined before participants completed the study, based on the time it took pilot subjects to thoroughly read and complete all parts of the survey. The decision to exclude participants who missed two or more knowledge check questions was also made before data collection occurred.
Materials

A set of questions assessing biogenetic beliefs pertaining to mental illness was adapted from Haslam, Bastina, & Bissett (2004). These questions determined the level to which participants believed mental illness was discrete, biologically based, immutable, informative, consistent, and inherent (Table 1). Each question was answered on a Likert scale of 1 to 7 (1 = strongly disagree, 7 = strongly agree) except for the biologically based question, which was answered with a percentage (0 to 100%).

An information sheet containing descriptive, factual material about either depression or schizophrenia was used in the knowledge conditions, serving as the independent variable. This information included illness definition, prevalence, onset, gender differences, criteria for diagnosis, symptoms, treatment, and common myths (Appendices A & B). This information was gathered from the DSM-5 and Understanding Abnormal Behavior. A set of five questions was created to verify participants had studied and retained facts from the information sheet (Appendices C & D). Any participant who answered two or more questions incorrectly was not included in analysis.

A 16-item questionnaire was created to assess stigma levels. These questions were slightly adapted from the Bogardus Social Distance Scale (1933), with additional questions added. The questionnaire assessed social distance desires, perceived responsibility, likeliness to help, perceived level of control, and perceived dangerousness (Table 2). Each set of stigma questions was answered on a Likert scale of 1 to 5, with value meanings differing for each subset of stigma. Social distance questions assessed a participant’s willingness to be near a person with mental illness (e. g., “How willing would you be to be friends with them?”). Perceived responsibility questions assessed how much participants believed a person with mental illness
was at fault for having such an illness (e.g., “How responsible do you believe they are for having this mental illness?”). Likeliness to help questions assessed how willing a participant would be to offer their help to a person with mental illness (e.g., “How willing would you be to help them through treatment?”). Perceived level of control questions assessed how much control a participant believed a person with mental illness had over their illness (e.g., “How much control do you believe they have over their mental illness?”). Finally, perceived dangerousness questions assessed how dangerous a participant believed someone with mental illness would be (e.g., “How likely do you think it is that they will create violent confrontations?”).

Demographic questions gathered participants’ age, sex, and race (Table 3). Level of exposure questions determined if participants had taken an Abnormal Psychology course, if they had a close relationship with someone with mental illness, and if they had a mental illness diagnosis (Table 3). All information presented to participants was presented through Qualtrics, an online survey system.

**Procedure**

The survey was posted and completed by participants on July 20th, 2017. Participants completed all parts of the survey online through MTurk. Each participant was randomly assigned to one of four conditions (depression with knowledge, depression without knowledge, schizophrenia with knowledge, or schizophrenia without knowledge). After signing the consent form, participants answered basic demographic questions. All participants then completed the biogenetic attribution scale, with questions worded to ask specifically about the illness in their condition (depression or schizophrenia).

Once the biogenetic attribution scale was completed, participants in the knowledge conditions viewed the information sheet and answered the knowledge check questions, before
moving onto the stigma questionnaire. Participants in the no knowledge conditions went directly to the stigma questionnaire. While answering the stigma questionnaire, participants were asked to think of a person with either depression or schizophrenia, according to their condition. Upon finishing the stigma questionnaire, participants answered the level of exposure questions.

**Results**

A Cronbach’s alpha calculation revealed the stigma questionnaire to be internally reliable, $\alpha = .889$. Therefore, each question measured stigma similarly, allowing for analysis of stigma as a whole. A series of $2 \times 2$ (knowledge condition: knowledge vs. no knowledge) ANCOVAs were used to analyze the effects of knowledge and disorder type on mental illness stigma, controlling for the covariate of biogenetic attribution beliefs. Parallel analyses were also completed with each individual measure of stigma separately (social distance, perceived responsibility, likeliness to help, perceived control, and perceived dangerousness).

When considering stigma as a whole, there was no main effect of disorder type; the mean score for depression was $3.09 (SD = 0.77)$, while the mean score for schizophrenia was $3.47 (SD = 0.64)$. This difference was not significant, $F (1, 103) = 1.08, p > 0.05$. There was also no significant knowledge x disorder type interaction, $F (1, 103) = 0.28, p > 0.05$. However, there was a main effect of knowledge, such that stigma levels were lower for participants in the knowledge condition ($M = 3.01, SD = 0.65$), than participants in the no knowledge condition ($M = 3.44, SD = 0.74$), $F (1, 103) = 8.81, p < 0.01$ (Figure 1). There was also a significant effect of the covariate of biogenetic attribution, $F (1, 103) = 5.89, p < 0.05$. A bivariate correlation revealed a significant positive relationship between biogenetic beliefs and total stigma levels, $r (106) = 0.35, p < 0.01$. 
For ANCOVAs analyzing separate dimensions of stigma, all non-significant findings will not be reported for the sake of concision, \( ps > 0.05 \). When analyzing social distance, there was a significant main effect of knowledge, such that social distances desires were lower for participants in the knowledge condition \( (M = 3.93, SD = 0.93) \) than participants in the no knowledge condition \( (M = 4.37, SD = 1.11) \), \( F (1, 103) = 3.95, p < 0.05 \) (Figure 2). There was a significant effect of the covariate of biogenetic attribution, \( F (1, 103) = 7.88, p < 0.05 \). A bivariate correlation revealed a significant positive relationship between biogenetic beliefs and social distance desires \( r (106) = 0.37, p < 0.01 \).

Analysis of perceived responsibility revealed a main effect of knowledge, such that participants in the knowledge condition perceived those with mental illness as less responsible for their illness \( (M = 2.22, SD = 0.83) \), than those in the no knowledge condition \( (M = 2.59, SD = 1.02) \), \( F (1, 103) = 4.02, p < 0.05 \). There was also a main effect of disorder type on perceived responsibility, such that participants perceived individuals with schizophrenia less responsible for their illness \( (M = 2.19, SD = 0.92) \), than individuals with depression \( (M = 2.68, SD = 0.94) \), \( F (1, 103) = 5.64, p < 0.05 \). Finally, there was a significant knowledge x disorder type interaction concerning perceived responsibility, \( F (1, 103) = 4.61, p < 0.05 \) (Figure 3). Participants in the depression no knowledge condition, reported higher levels of perceived responsibility than participants in the schizophrenia no knowledge condition. This difference was not seen, however, in the knowledge condition.

Lastly, a main effect of knowledge was found on perceived dangerousness, such that reports of perceived danger were lower in the knowledge condition \( (M = 1.87, SD = 1.06) \), than the no knowledge condition \( (M = 2.49, SD = 1.11) \), \( F (1, 103) = 9.36, p < 0.01 \). There was also a main effect of disorder type, such that participants reported less perceived danger for depression
(M = 1.74, SD = 0.94), than for schizophrenia (M = 2.78, SD = 1.07), F (1, 103) = 7.23, p < 0.05. There was also a significant effect of the covariate of biogenetic attribution, F (1, 103) = 10.51, p < 0.01. A bivariate correlation revealed a significant positive relationship between biogenetic beliefs and perceived dangerousness, \( r (106) = 0.49, p < 0.01 \) (Figure 4).

To determine if a relationship existed between exposure to mental illness and total stigma, a bivariate correlation was run. Participant’s total exposure score was determined by adding up the values of their answers to the exposure questions (Table 3). Questions answered with “yes” or “no” were assigned one point for every yes answer, while the Likert scale question was assigned the value of the chosen answer. These values were then averaged for every participant to have a total exposure score. The mean exposure score was 0.77 (SD = .44). The bivariate correlation showed no significant relationship between exposure to mental illness and total stigma levels, \( r (106) = -.182, p = 0.06 \). However, the \( p \) value of the correlation showed a trend towards increased exposure related to decreased stigma levels.

**Discussion**

The purpose of this study was to determine the effects of knowledge, disorder type, and causal attribution on mental illness stigma. The effects of these variables were analyzed for five levels of stigma; social distance, perceived responsibility, likeliness to help, perceived control, and perceived dangerousness. When considering stigma as a whole, disorder type was found to not influence stigma levels. This finding does not support the hypothesis that stigma levels would be higher in the schizophrenia condition. However, when each stigma level was analyzed individually, disorder type significantly influenced perceived responsibility and perceived dangerousness. Subjects in the depression condition reported higher levels of perceived responsibility than subjects in the schizophrenia condition. Additionally, subjects in the
schizophrenia condition reported significantly higher levels of perceived dangerousness than subjects in the depression condition. These level specific effects may indicate cause for specific types of discrimination experienced by individuals with schizophrenia and depression.

It was expected that knowledge would produce a significant effect on total stigma levels, with participants in the knowledge condition reporting lower total stigma than participants in the no knowledge condition. The hypothesis was supported by the results, with significantly lower total stigma levels in the knowledge condition versus the no knowledge condition. This finding is in concordance with previous research, but also shows that very brief and inexpensive knowledge interventions can produce significant results. Previous interventions were 1-hour or longer programs that utilized presenters, whereas this intervention was a fact sheet presented to participants during a survey. Subjects in the knowledge condition spent an average time of 500.16 seconds (8.34 min) on the entire survey. The current intervention is therefore significantly shorter, but still produced a drop in stigma levels. Brief interventions may then be used to reduce stigma, saving organizations time and money.

Even though knowledge was effective in reducing total stigma, along with several individual stigma levels, the impact of knowledge on perceived dangerousness was not entirely as expected. When considering perceived dangerousness, there was a main effect of knowledge and a main effect of disorder type. However, there was no significant knowledge by disorder type interaction on the level of perceived dangerousness. This finding indicates that information pertaining to myths about dangerousness, presented in the schizophrenia knowledge sheet, was not powerful enough to marginally lower perceptions of dangerousness. Therefore, future studies should investigate what types of information is needed to break the myth about psychotic illnesses and dangerousness.
Causal attribution was also found to have a significant positive relationship with total stigma levels, with a more biogenetic view associated with higher levels of total stigma. When considering the relationship between causal attribution and each individual level of stigma, social distance and perceived dangerousness showed significant positive relationships. Subjects who reported more biogenetic views reported more desired social distance and more perceived dangerousness than subjects who reported less biogenetic views. This finding is consistent with the hypothesis that stronger biogenetic views would result in higher social distance desires and perceived dangerousness beliefs. It also coincides with previous research that found biogenetic views to influence these specific stigma levels (Kvaale, Gottdiener et al., 2013). However, results did not find support for a biogenetic view being linked to higher likeliness to helps, lower perceived responsibility, or lower perceived control.

The present finding of no link between a biogenetic view and lowered perceived responsibility does not coincide with previous research findings. Previous research shows a biogenetic causal attribution belief to reduce perceived responsibility (Kvaale, Gottdiener et al., 2013; Kvaale, Haslam et al., 2013). It is not clear why this finding, though well documented in other studies, was not replicated here. One possibility is that the questions intended to quantify perceived responsibility were interpreted differently than anticipated. These questions were meant to determine if participants believed an individual with mental illness was at “fault” for their condition and resulting behaviors. Instead, participants may have read the questions in more general terms, thus answering in regards to responsibility of all persons for their actions, illness or not.

However, the present study did find an interaction between the variables of knowledge and disorder type, concerning the level of perceived responsibility. This interaction showed
participants in the depression, no knowledge condition scoring higher on perceived responsibility than participants in the schizophrenia, no knowledge condition; this difference was not seen in the knowledge condition. Therefore, no knowledge condition participants were attributing more responsibility to individuals with depression than individuals with schizophrenia. This finding matches previous research which shows more blame and responsibility associated with depression (Parcesepe & Cabassa, 2013).

The relationship between causal attribution and stigma uncovered by the present study suggests that care must be taken when educating individuals on the acquisition of mental illness, as it affects certain stigma levels. Individuals in educating positions, such as therapists, doctors, or teachers, should avoid exclusively centering on a biogenetic cause as explanation for mental illness, as it is associated with elevated levels of stigma. Educators could instead emphasize psychosocial or social-cognitive frameworks of attribution. These explanations would associate environmental and cognitive improvements with recovery, taking away the idea that individuals with mental illness cannot improve. Such frameworks may also provide relief to those with mental illness, who believe their illnesses to be innate and unchangeable, encouraging hope and treatment seeking.

This study found a trend between exposure to mental illness and total stigma. The trend showed more exposure to mental illness may be linked with lower levels of total stigma. However, this trend was not statistically significant. The present study did not assess mental illness exposure in depth but instead asked general exposure questions (Table 3). Future research should investigate this trend more specifically, by assessing exposure to mental illness more directly. Such questions should uncover specific relationships participants have with individuals with mental illness, as well as participant’s specific experiences with their own mental illnesses.
More in depth measures may reveal a significant association between exposure to mental illness and total stigma. The present trend would suggest this relationship would be negative.

Even though positive results were found, a few limitations should be discussed. When considering representativeness of the sample, MTurk participants may be more highly educated, on average, than the general public average. Higher education is linked with decreases in stigmatizing attitudes, which could have bolstered the effects of the knowledge intervention. Additionally, the mean age of participants was 35 years old, a few years below the 2016 national median age (Statista, 2017). However, a younger sample may not represent the true stigma level of the general public or their openness to knowledge influence. Older individuals may hold more stigmatizing attitudes or be less susceptible to knowledge influence.

Although these representativeness limitations should be taken into consideration, their influence on the findings are thought to be minimal. A larger limitation concerns the study design, utilizing a self-report survey. It is unclear if these self-report results truly represent participant real world actions. The results may not translate into real world helping or befriending of individuals with mental illness. A self-report study does not measure real world behaviors accurately, therefore claims cannot be made beyond the ability of knowledge to change attitudes.

In light of these limitations, future research should focus on applying knowledge interventions to real world behaviors. Some behaviors targeted should include actual helping decisions, openness to mental health related discussions, and willingness to educate friends and family. Research to test interventions intended to improve actual helping decisions could expose participants to testimonials from individuals with mental illness, who were helped by others. Participants could then be put in blind, controlled situations where their newly learned skills
would apply, to determine the effectiveness of the intervention. Modeling could be used as a tool in targeting openness to mental health discussions and willingness to educate others. Researchers would expose participants to these specific behaviors and their positive outcomes, and participants would report back if and how many times they used these behaviors, after a period of time. Questions would be asked retrospectively instead of prospectively, thus measuring real world behaviors more accurately. By discovering how knowledge interventions influence live behaviors, programs can adapt their stigma intervention regiment to produce such changes.

Increasing knowledge may not account for behavior change on its own, and specific styles of intervention techniques may produce better results. Researchers should investigate the efficacy of interventions that cover specific situations in which friends and family can help individuals with mental illness. By pointing out specific actions an individual can take, people may be able to develop the tools necessary to assist in treatment seeking or recover, and feel equipped to offer help.

Though the present study was successful in using information to reduce stigma, the information made available to participants was expansive and broad. Therefore, it cannot be determined which specific piece, or pieces, of information had the most effect. One would be led to believe that the information refuting common societal myths, along with an accurate definition, would have worked to reduce stigma the most. Future researchers should run multi-conditional studies, testing various categories of information, to determine which materials are the most suitable for reducing public stigma.

The present study investigates public stigma, however, self-stigma has also been shown to have a pervasive, negative impact on individuals with mental illness. Researchers should employ the concept of knowledge reducing public stigma to reduce self-stigma. Therapists and
mental health organizations could inform their clients about the ins and outs of their illness. Increasing an individual’s knowledge of their disorder, and even others, could lower their guilt and self-blaming, thus improving self-esteem, well-being, and hope. Once these qualities are bolstered, individuals with mental illness may respond quicker to treatment and become active in convincing others to seek treatment.

Future research should also determine if brief interventions, such as the one utilized in the present study, produce long-lasting effects. The current study tested attitude changes directly after the exposure to knowledge, however, these effects may not continue. Investigators should conduct a longer duration study to find if brief interventions can cause lasting changes in stigma levels.

Conclusion

Stigma is undeniably present in society, comes in many forms, brings distressing consequences, and can be influenced by a variety of factors. However, this study, along with many others, shows that knowledge can be a useful tool in reducing mental illness stigma. Additionally, this study shows even very brief interventions can be successful and could be utilized as cost-effective ways of reducing public stigma. By learning more about how certain factors influence the formation and stability of stigma, we can discover the best ways to reduce stigma and eliminate its damaging consequences.
References


Table 1

*Biogenetic Attribution Scale*

<table>
<thead>
<tr>
<th>Discreteness</th>
</tr>
</thead>
<tbody>
<tr>
<td>People either have schizophrenia or they do not.</td>
</tr>
<tr>
<td>People who have schizophrenia are a distinct type of person.</td>
</tr>
</tbody>
</table>

**Biological Basis**

To what extent is schizophrenia based on the person’s genetic make-up?

**Immutability**

A person with schizophrenia can easily change the way they think and feel. Schizophrenia is not a fixed attribute of a person.

**Informativeness**

Schizophrenia influences people’s behavior in a wide variety of situations and in many aspects of their lives.

**Consistency**

People with schizophrenia will display it in a consistent manner, in different situations and with different people.

**Inherence**

Schizophrenia is a deeply-rooted part of personality. Schizophrenia lies deep within a person and underlies a person’s behavior.

*Notes.* Individuals in the depression condition would receive the questionnaire with “depression” in the place of “schizophrenia”. Participants do not see topic headings.

All questions are scored on a 7 point scale with 1 = strongly disagree and 7 = strongly agree, except for biological basis (reported as a percentage 0-100).
Table 2

*Questions Assessing Stigma*

<table>
<thead>
<tr>
<th>Social Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>How willing would you be to be friends with them?</td>
</tr>
<tr>
<td>How willing would you be to have an intimate relationship with them?</td>
</tr>
<tr>
<td>How willing would you be to be their neighbor?</td>
</tr>
<tr>
<td>How willing would you be to have them as a coworker?</td>
</tr>
<tr>
<td>How willing would you be to collaborate with them on a work project?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Perceived Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td>How responsible do you believe they are for their actions?</td>
</tr>
<tr>
<td>How responsible do you believe they are for having this mental illness?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Likeliness to Help</th>
</tr>
</thead>
<tbody>
<tr>
<td>How willing would you be to help them through treatment?</td>
</tr>
<tr>
<td>How willing would you be to help them find a job?</td>
</tr>
<tr>
<td>How willing would you be to show them around the neighborhood?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Perceived Level of Control</th>
</tr>
</thead>
<tbody>
<tr>
<td>How much control do you believe they have over their mental illness?</td>
</tr>
<tr>
<td>How much control do you believe they have over their behavior?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Perceived Dangerousness</th>
</tr>
</thead>
<tbody>
<tr>
<td>How likely do you think it is that they will create violent confrontations?</td>
</tr>
<tr>
<td>How likely do you think it is that they have frequent encounters with the police?</td>
</tr>
<tr>
<td>How likely do you think it is that they will spend some time in jail?</td>
</tr>
<tr>
<td>How likely do you think it is that they will harm someone?</td>
</tr>
</tbody>
</table>

*Notes.* Stigma questions are the same for all conditions. Participants do not see topic headings.

All questions are scored on a 5 point scale. Scale meanings differ; for social distance and likeliness to help 1= unwilling and 5 = willing, for perceived responsibility 1= not at all responsible and 5= very responsible, for perceived level of control 1= complete control and 5= no control, and for perceived dangerousness 1= unlikely and 5= likely.
Table 3

*Mental Illness Exposure Items*

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Have you ever taken an Abnormal Psychology course?</td>
<td></td>
</tr>
<tr>
<td>How much exposure have you had to mental illness?</td>
<td></td>
</tr>
<tr>
<td>Do you have a family member, close friend, or intimate partner who</td>
<td>has been diagnosed with a mental illness?</td>
</tr>
<tr>
<td>Have you yourself been diagnosed with a mental illness?</td>
<td></td>
</tr>
</tbody>
</table>

*Notes.* All questions, except level of exposure, are answered “yes” or “no”. Level of exposure is answer on a 4 point scale (1= little to no exposure and 4= significant exposure).
Figure 1. Total stigma scores. Significance indicated by asterisk.
Figure 2. Stigma level scores for social distance measure. Significance indicated by asterisk.
Figure 3. Stigma level scores for perceived responsibility. Significance indicated by asterisk.
Figure 4. Stigma level scores for perceived dangerousness. Significance indicated by asterisk.
Appendix A

Depression Information Sheet

Depression (Major Depressive Disorder)

**Definition** (Understanding Abnormal Behavior, pg. 235)

A condition diagnosed if someone experiences a depressive episode with depressive symptoms that negatively affect functioning for most of the day. This disruption occurs nearly every day for at least 2 full weeks.

**Prevalence** (Understanding Abnormal Behavior, pg. 235)

Approximately 14% to 16% of the population will experience a period of major depressive disorder during some point of their life.

**Age of Onset** (Understanding Abnormal Behavior, pg. 235)

Major depressive disorder can occur at any age, however, the average age of onset is during the late 20’s.

**Gender Differences** (DSM-5, pg. 165)

Major depressive disorder occurs about 1.5 to 3 times more often in females.

**Criteria for Diagnosis** (DSM-5, pg. 160-161)

- Five or more major depressive symptoms are present during the same 2-week period. These symptoms show a change from previous functioning.
- Symptoms cause significant distress and/or impairment in social, work, and other areas of functioning.
- The episode of major depression is not caused by effects of a substance or other medical condition.

**Symptoms** (DSM-5, pg. 160-161)

- Depressed mood most of the day, nearly every day
- Lessened interest in almost all activities for most of the day, nearly every day
- Significant weight loss or gain
- Inability to sleep or excessive sleepiness nearly every day
- Loss of energy nearly every day
- Diminished ability to concentrate or think nearly every day
- Frequent thoughts of death and suicide

**Treatment** (Understanding Abnormal Behavior, pgs. 249-254)

There are various approaches that can be used when treating depression. These techniques can be combined, and often doing so produces the optimal recovery outcome.

- Medication (Antidepressants)
- Cognitive-Behavioral Therapy (A therapy technique that focuses on changing the negative thinking patterns and distortions present in depression)
- Lifestyle Changes

**Common Misconceptions** (See Sources Below)

- Myth: You can “snap out” of depression with positive thinking. ([http://www.mentalhealthamerica.net/sites/default/files/Breaking_Down_the_Myths_About_Depression.pdf](http://www.mentalhealthamerica.net/sites/default/files/Breaking_Down_the_Myths_About_Depression.pdf))
  - Fact: Depression does not result from choice and cannot be “snapped out” of. Depression is a health condition brought about by changes in the brain due to environmental and biological factors.
- Myth: Depression is being sad. ([https://www.hpb.gov.sg/HOPPortal/health-article/10202](https://www.hpb.gov.sg/HOPPortal/health-article/10202))
  - Fact: Sadness is a symptom of depression, however, there are additional symptoms that must be present for a diagnosis to be made. These other symptoms are physical as well as cognitive.
  - Fact: Depression is a medical related condition and not associated with the strength of an individual’s character.
- Myth: Medication is the only way to treat depression. ([https://www.hpb.gov.sg/HOPPortal/health-article/10202](https://www.hpb.gov.sg/HOPPortal/health-article/10202))
  - Fact: Medication is one way to treat depression, but not the only option. Psychological counseling and changes in lifestyle can be used as well, or in combination with medication. However, the correct and most successful treatment varies based on the individual.

*Note.* Participants do not see references.
Appendix B

Schizophrenia Information Sheet

Schizophrenia

**Definition** (Understanding Abnormal Behavior, pg. 364)

A disorder identified by severely impaired cognitive functioning, personality fragmentation, instability of mood, and social withdrawal.

**Prevalence** (Understanding Abnormal Behavior, pg. 392)

Approximately 1% of the population will experience schizophrenia in their lifetime.

**Age of Onset** (Understanding Abnormal Behavior, pg. 392)

The typical age of onset of schizophrenia for males is around 18 to 24 years of age and 24 to 35 years of age for females.

**Gender Differences** (DSM-5, pg. 103)

Schizophrenia occurs slightly more often in males.

**Criteria for Diagnosis** (DSM-5, pg. 99)

- Presence of two or more of the following symptoms for a significant period of time during 1 month.
  - Delusions
  - Hallucinations
  - Disorganized speech
  - Disorganized physical movement/behavior
  - Negative symptoms $\rightarrow$ decreased ability to act, speak, express emotion, or feel pleasure (Understanding Abnormal Behavior, pg. 372)
- Functioning in major areas of life (work, relationships, or self-care) is below the previous standard of the individual.
- Signs of the disturbance continue to occur for 6 months.
- The disorder and its symptoms are not better explained by another disorder, substance abuse, or another medical condition.

**Symptoms** (Understanding Abnormal Behavior, pg. 372)

- Delusions/false beliefs
- Hallucinations (sensory experiences that seem real but do not exist outside of the mind)
- Disordered thinking and speech
- Catatonia (disturbance in body movement – either excited movements or lack of motion)
- Inability to initiate behaviors
- Loss of interest in social relationships
- Loss of ability to feel pleasure
• Limited display of emotion (facial expressions, tone changes in speech, or gestures)

**Treatment** *(Understanding Abnormal Behavior, pgs. 386-389)*

There are various approaches that can be used when treating schizophrenia. These techniques can be combined and often doing so produces the optimal recovery outcome.

• Medication (Antipsychotics)
• Psychosocial Therapy (Teaches social skills like conversational skills and physical presentation)
• Cognitive-Behavioral Therapy (Teaches coping skills to help patients manage their symptoms)

**Common Misconceptions** *(http://www.neomed.edu/academics/bestcenter/helpendstigma/myths-and-facts-about-schizophrenia)*

• Myth: People with schizophrenia are dangerous.
  o Fact: Individuals with schizophrenia are no more dangerous than the rest of the population, instead they typically withdraw socially and seclude themselves.

• Myth: People never recover from schizophrenia.
  o Fact: Even though there is no cure for schizophrenia, the correct treatment can allow individuals with schizophrenia to live the most successful and productive life possible.

• Myth: People with schizophrenia have multiple personalities.
  o Fact: Individuals with schizophrenia suffer from a “split” from reality. Schizophrenia does not involve multiple personalities.

• Myth: People have schizophrenia due to weak personalities.
  o Fact: Schizophrenia is a complex disorder and is not associated with the strength of a person’s character.

*Note.* Participants do not see references.
Appendix C

Depression Knowledge Check Questions

**Depression** (Correct answers are bolded)

1. Depression is diagnosed if someone experiences a depressive episode with ____________ __________ that negatively affect functioning for most of the day. This disruption occurs nearly every day for at least ________________.
   a. Manic symptoms; 4 full weeks
   b. Depressive symptoms; 4 full weeks
   c. Manic symptoms; 2 full weeks
   d. **Depressive symptoms; 2 full weeks**

2. Which of the following are symptoms of depression? (Select all that apply)
   a. Delusions
   b. **Loss of interest in activities**
   c. **Loss of energy**
   d. Disorganized speech
   e. **Excessive weight loss or gain**

3. Which of the following would be the most optimal treatment path for someone with depression?
   a. Lifestyle changes
   b. Medication
   c. Cognitive-Behavioral Therapy
   d. **All of the Above**

4. An individual with depression can get over their symptoms if they think positively.
   a. True
   b. False

5. Sadness is a symptom of depression, along with other mental and physical symptoms.
   a. **True**
   b. False

**Note.** Any participant who answered two or more questions incorrectly was not included in analysis.
Appendix D

Schizophrenia Knowledge Check Questions

Schizophrenia (Correct answers are bolded)

1. Schizophrenia is identified by __________ impaired cognitive functioning, personality fragmentation, ________________, and social withdrawal.
   a. Slightly; instability of mood
   b. Moderately; catatonia
   c. Severely; instability of mood
   d. Moderately; delusions

2. Which of the following are symptoms of schizophrenia? (Select all that apply)
   a. Hallucinations
   b. Limited display of emotion
   c. Frequent thoughts of suicide
   d. Disordered thinking
   e. Depressed mood most of the day

3. Which of the following would be the most optimal treatment path for someone with schizophrenia?
   a. Cognitive-Behavioral Therapy
   b. Medication
   c. Psychosocial Therapy
   d. All of the Above

4. People who have schizophrenia are dangerous and often hurt others.
   a. True
   b. False

5. There may be no cure, but proper treatment can help individuals with schizophrenia lead successful and productive lives.
   a. True
   b. False

Note. Any participant who answered two or more questions incorrectly was not included in analysis.
INSTITUTIONAL REVIEW BOARD
RESEARCH INVOLVING HUMAN SUBJECTS
OTTERBEIN UNIVERSITY

ACTION OF THE INSTITUTIONAL REVIEW BOARD

With regard to the employment of human subjects in the proposed research:

HS # 16/17-54
Meyer & Ferguson: Stigma and its reduction: The role of mental disorder type, ...

THE INSTITUTIONAL REVIEW BOARD HAS TAKEN THE FOLLOWING ACTION:

☑ Approved

☐ Disapproved

☐ Approved with Stipulations*

☐ Waiver of Written Consent Granted

☐ Deferred

*Stipulations stated by the IRB have been met by the investigator and, therefore, the protocol is APPROVED.

It is the responsibility of the principal investigator to retain a copy of each signed consent form for at least four (4) years beyond the termination of the subject’s participation in the proposed activity. Should the principal investigator leave the college, signed consent forms are to be transferred to the Institutional Review Board for the required retention period. This application has been approved for the period of one year. You are reminded that you must promptly report any problems to the IRB, and that no procedural changes may be made without prior review and approval. You are also reminded that the identity of the research participants must be kept confidential.

Date: 5 February 2017

Signed: [Signature]

Chairperson

OC HS Form AF

Please make two additions. 1) Add a line to the consent form stating that the participant attests that he/she is 18 years of age or older (the wording is up to you). 2) In the demographics section, it would be better to use the word "gender" instead of "sex" and to include the category "other." This second suggestion is up to you to take or leave.