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## Effects of Illness Type and Empathy Induction On Illness-Related Stigma in Undergraduate Students

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EFFECTS OF ILLNESS TYPE AND EMPATHY INDUCTION ON ILLNESS-  
RELATED STIGMA IN UNDERGRADUATE STUDENTS

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A Thesis

Presented to

The Graduate Faculty

Central Washington University

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In Partial Fulfillment

of the Requirements for the Degree

Master of Science

Experimental Psychology

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by

Karlie Hill

March 2020

CENTRAL WASHINGTON UNIVERSITY

Graduate Studies

We hereby approve the thesis of

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## ABSTRACT

### EFFECTS OF ILLNESS TYPE AND EMPATHY INDUCTION ON ILLNESS-RELATED STIGMA IN UNDERGRADUATE STUDENTS

By

Karlie Hill

March 2020

The current study investigated if increasing empathy would decrease stigma toward populations with illness. One hundred and seventy-nine participants were randomly assigned to one of three conditions: 1) sexually transmitted infections (STIs), 2) mental illness, or 3) cancer. Participants were primed with either a high-empathy prompt or low-empathy prompt. After reading the prompt, participants read a vignette detailing the experience of being diagnosed with the illness in their condition. Participants then responded to three stigma measures to assess their stigmatizing attitudes toward the person in the vignette with the illness. To test the experimental hypothesis, a multivariate analysis of covariance (MANCOVA) was conducted using the empathy prime (high-empathy versus low-empathy) and the type of illness presented in the vignette (mental illness, STI, cancer) as independent variables. Self-reported empathy score was a significant covariate on the combined stigmatization measures. The empathy prime did not have a significant effect on either self-reported empathy or stigmatization. Type of illness did have an effect on the stigma measures, with cancer having the lowest stigmatization scores. These findings indicate that mental illness and STIs are stigmatized more than cancer and that empathy impacts stigmatization of those with such illnesses.

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## CHAPTER I

### INTRODUCTION

Illness- related stigma is known to create barriers for getting tested for disease, seeking treatment, and disclosing a diagnosis (Centers for Disease Control, 2014; Cunningham, Kerrigan, Jennings, & Ellen, 2009). Stigma also can be felt as discrimination, causing feelings of shame, fear, or anxiety (Link, Yang, Phelan, & Collins, 2004). The psychological burden felt by stigmatized individuals often leads to fear of rejection, isolation, or delayed treatment-seeking (Barth, Cook, Downs, Switzer, & Fischhoff, 2002).

Illnesses such as sexually transmitted infections (STIs) are often stigmatized, in part, due to being hidden illnesses that do not show visible signs (Lichtenstein, Hook, & Sharma, 2005). Further, they are typically not openly discussed, leading to further shame and fear of social ramifications (Foster & Byers, 2008). According to the Centers for Disease Control (CDC), there are nearly 20 million newly reported cases of STIs each year, with young people aged 15 to 24 being most likely to be diagnosed (CDC, 2019). STI related stigma often leads to people being less likely to be screened for STIs and to disclose a diagnosis due to perceived negative peer consequences (Barth et al., 2002). Often, the fear of being socially rejected by peers, or having to disclose, is secondary to the diagnosis (Foster & Byers, 2008).

Mental illnesses constitute another class of illnesses that are not visible and often stigmatized (Spagnolo, Murphey, & Librera, 2008). Mental illness diagnoses can also lead to feelings of shame, guilt, and impact one's self-esteem (Sickel, Seacat, & Nabors, 2014). The stigma surrounding mental illness also leads individuals to delay seeking

treatment, evade disclosing their diagnosis, or avoid openly discussing their experience (Spagnolo et al., 2008). Perceived discrimination also frequently leads individuals to avoid seeking a diagnosis in an effort to avoid being labeled as mentally ill (Corrigan, 2004).

Understanding how stigma can be reduced is critical to ensuring people seek treatment in order to reduce feelings of shame and anxiety regarding a diagnosis. Education, contact with individuals who have a diagnosis, and real-life examples of recovery or illness management are three ways in which stigma can be reduced (Spagnolo et al., 2008). Corrigan et al., (2001) found that education and contact with those who have been diagnosed significantly changed attitudes of participants in a study examining mental illness stigma. Empathy is another stigma reduction tool. DasGupta and Charon (2004) used narratives on personal illness to evoke empathy in medical school patients. These have been found to be effective in reducing stigma.

## CHAPTER II

### LITERATURE REVIEW

Illness-related stigma has been shown to create barriers to treatment-seeking behaviors by reducing the likelihood that an individual will access healthcare, seek testing and treatment, and report a diagnosis (Barth et al., 2002; CDC, 2019; Cunningham et al., 2009). Regarding infectious diseases, such as sexually transmitted infections (STIs), not disclosing a diagnosis may increase the likelihood of STI transmission (Cunningham et al., 2009). With STIs, mental illness, and obesity, stigma has been shown to become internalized, leaving individuals with a psychological burden that may create an additional barrier to treatment of illnesses (Foster & Byers, 2008; Link et al., 2004). Negative social consequences, such as peer rejection, may also lead to isolation and further delay treatment (Barth et al., 2002). Therefore, investigating methods that may be effective in reducing stigma such as education, personal stories, and empathy is essential to combatting barriers to treatment (Barth et al., 2002; Corrigan et al., 2001).

#### **Definitions of Stigma**

Historically, stigma has been studied in the field of social psychology due to the nature of stereotypes and hidden burdens associated with it (Link, Phelan, Bresnahan, Stueve, & Pescosolido, 1999). Lichtenstein et al. (2005) state that stigma can be enacted or felt. Enacted stigma is when people who are considered “morally, socially, racially, or physically tainted” (p. 44) are stigmatized by individuals who are considered normal. Felt stigma is the fear of experiencing this discrimination (Lichtenstein et al., 2005). Discrimination may cause feelings of anger, anxiety, or fear, leading the stigmatized individual to experience shame or embarrassment. The creation of in-and-out groups,

with those in the in-being seen as more accepted or socially desirable to be around than those in the out-group, increases pressure to feel accepted by the group. If the individual is not accepted, this may lead to feelings of stigmatization (Link et al., 2004). Due to the burden which stigmatization places on individuals, it is important to understand not only the impact of stigmatization and the best method for evaluating and measuring stigma.

Stigma is often measured using scales assessing attitudes towards populations, regarding discrimination, or related to social distance. Link, Cullen, Struening, Shrout, and Dohrenwend (1999) developed the Devaluation-Discrimination Scale, which measures how an individual may devalue or discriminate against psychiatric patients. The scale included items such as “most people would willingly accept a former mental patient as a close friend” or “most employers will hire a former mental patient if he or she is qualified for the job” (p. 412). Attitude questionnaires have also been used to assess attitudes towards individuals in stigmatized populations. Barth et al.’s (2002) Modified Questionnaire-AIDS Victims utilizes questions such as “for most people with AIDS, it is their fault they have AIDS” (p. 108) or “our society should do more to protect the welfare of people with AIDS” (p. 109). These measures have been frequently used in research on stigma associated with mental illness, obesity, and other stigmatized populations.

### **Impact of Stigma on Illness**

Discrimination and isolation may increase emotional difficulties in stigmatized individuals. Link, Struening, Neese-Tood, Asmussen, and Phelan (2001) suggested that stigma may also come from a need for power. Stigma has often been used as a tool for social, cultural, economic, and political control (Link et al., 2001). As a society, people strive for acceptance and social desirability. Stigma has been directed toward populations

experiencing illness, such as mental illness and STIs (Corrigan et al., 2001; Cunningham et al., 2009). Watson, Corrigan, Larson, and Sells (2007) hypothesized that there were two components which may delay treatment of mental illness: public stigma and self-stigma. Both public stigma and self-stigma include stereotyping, prejudice, and discrimination. Self-stigma is the internalization of stigma and may affect an individual's self-esteem, quality of life, and social opportunities. Stigma creates a barrier for treatment and stigma internalization may have lasting psychological effects, including anxiety, depression, or shame (Foster & Byers, 2008).

Eisenburg, Downs, Golberstein, and Zivin (2009) suggested that stigma creates barriers for seeking treatment of mental illness. Their study regarding college students examined the association between help-seeking behaviors and perceived and public stigma as measured via self-report measures, including the Devaluation-Discrimination Scale (Link, 1987), items from Healthcare for Community Studies (Wells, Sturm, & Burnam, 2003), and the Patient Health Questionnaire (Spitzer, Kroenke, & Williams, 1999). Eisenburg et al. (2009) found that self-reported perceived stigma was higher than public stigma and that public stigma was negatively associated with help-seeking behaviors. Similarly, Lichtenstein et al. (2005) found that participants reported that embarrassment about their condition resulted in delays or avoidance in seeking treatment for STIs. Thus, a better understanding of which illnesses may be impacted by stigmatization is particularly important as stigma clearly affects testing and the pursuit of treatment within some patient populations.

### **Sexually Transmitted Infections (STIs)**

As indicated by the findings of Lichtenstein et al. (2005), STIs are a class of diagnoses that have often been stigmatized. The National Institute of Child Health and Human Development (year) defines STIs as “infections caused by bacteria or viruses that are passed from person-to-person through sexual contact with the penis, vagina, anus, or mouth” (“Sexually Transmitted Diseases [STDs]: An Overview”, para. 1). STIs are perhaps best described as hidden illnesses in that those who are infected do not typically show visible signs. Further, such infections are not openly discussed due to the fear of the social ramifications of being associated with such a diagnosis (Foster & Byers, 2008). Despite the negative association, STIs are an epidemic across globally.

According to the CDC (CDC, 2019), there are nearly 20 million newly reported STIs each year, half of which occur among young people aged 15 to 24. The two most commonly reported STIs in 2018 were chlamydia and gonorrhea (CDC, 2019). STIs can lead to a number of medical and psychological consequences. When left untreated, STIs can lead to issues of infertility, chronic abdominal pain, infections of the uterus, fallopian tubes, pelvic inflammatory disease, human papillomavirus, ectopic pregnancies, amongst other medical diagnoses (CDC, 2019). The psychological consequences of STIs may include increased levels of depression, shame, shock, withdrawal, anxiety, and anger (Foster & Byers, 2008). The implications of STIs extend beyond the individual and also affect the United States at large. The CDC (2019) estimates that the United States spends \$742 million annually to treat curable STIs.

### **Spread of STIs**

STIs may go undiagnosed and/or underreported due to social stigma and negative consequences, even with knowledge of infections and sexual health education.

Furthermore, cases that remain undiagnosed may contribute to the spread of STIs (CDC, 2019; Cunningham et al., 2009). One factor that may contribute to the rapid rise in STI rates among young people is failure to disclose a STI diagnosis. Disclosure of a STI diagnosis may decrease perceptions of social desirability and increase vulnerability of infection in partners of someone with a STI due to a lack of disclosure. de Araujo, Alvarez, & Sánchez (2014) suggested that young adults often engage in sexually risky behaviors, such as sex without condoms, sex with multiple partners, and first sexual intercourse at a young age. Unfortunately, those who engaged in intercourse at a younger age were more likely to engage in other risky sexual behaviors, which may, then, contribute to the spread of infection. According to de Araujo et al. (2014), engaging in risky behaviors may be due to a lack of self-efficacy to refuse sex or the absence of skills needed to negotiate condom use. Importantly, decreased engagement in sexually risky behaviors and increased knowledge of STIs and human immunodeficiency virus (HIV) predicted higher self-efficacy to refuse sex and increased condom use (de Araujo et al., 2014). Additionally, self-efficacy to refuse sex was a significant predictor of age of sexual debut and the number of sexual partners. LaBrie, Pederson, Thompson, and Earlywine (2008) theorized that young adults often engage in intercourse with people whom they are unfamiliar, leading to less open conversations about sexual history, including the number of partners and sexual health history.

According to the CDC, condom use is effective in protecting against STIs, but 46% of college students reported not using a condom during their last sexual intercourse (CDC, 2019). Sun, Liu, Shi, Wang, Wang, and Changvauth (2013) found that only 24.8% of participants in their study who reported being sexually active also used condoms

consistently and that condom use was higher among those who had greater HIV/AIDS knowledge, self-efficacy, and intent to use a condom. Other contributing factors to condom use include alcohol and sexual coercion (Fair & Vanyur, 2011; LaBrie et al., 2008). Fair and Vanyur (2011) found that participants who reported experiencing sexual coercion such as verbal pressure, threats, or excessive alcohol consumption were less likely to use condoms than those who did not experience coercion. Fair and Vanyur (2011) also found that alcohol use and verbal aggression were negatively associated with condom use. Consistent use of condoms has been shown to be effective in protecting against STIs, though additional self-efficacy education may be an important facet in reducing STI transmission.

### **STI Stigma**

As previously noted, STI stigma creates a barrier to being tested and seeking treatment. Cunningham et al. (2009) hypothesized that these barriers may include the perception of negative attitudes toward STIs and STI-related shame that would be a consequence of a positive test result. In their study, Cunningham et al. (2009) found that, in a sample of 15 to 24 year olds, those who reported higher STI-related stigma also viewed STI screening as more stigmatized and were less likely to get tested. Barth et al. (2002) reported that negative consequences, including being perceived as dirty or irresponsible, the effects of gossip, and being judged harshly by peers were the most influential reasons that college students aged 18 to 23 years old cited as influencing their decision to get tested for STIs. In that study, participants reported that they would feel embarrassed, “scared of having a disease,” and “fear that is may come back positive” (p.155-156). Barth et al. (2002) further proposed that individual factors such as negative



personal emotions, perceived severity of disease, denial that one could have a STI, and preference to not know if they have a disease all influenced the decision to get tested. Additionally, Barth et al. (2002) suggested that health care system factors such as comfort level with a provider and test setting, confidentiality, cost, and convenience, can all contribute to the likelihood that an individual will get tested.

Foster and Byers (2008) argued that the acquisition of STIs has historically been misattributed to deviant behavior and immorality rather than a consequence of normal sexual activity. Thus, the fear of being socially rejected or the object of social stigma is secondary to a STI diagnosis. Further, undergraduate participants who had more conservative sexual attitudes, as measured by the Sexual Attitudes Scale (Hudson, Murphy, & Nurius, 1983), also had higher scores on authoritarianism scales, as measured by Right-Wing Authoritarianism Scale (Altemeyer & Hunsburger, 1992). The researchers also found that participants who did not have an acquaintance with a STI reported higher levels of STI-related stigma and lower levels of sexual education and knowledge (Foster & Byers, 2008). They hypothesized that negative attitudes towards STIs and increased levels of stigma might be due to the negative characteristics associated with responsibility and morality of acquiring a STI and that individuals with higher levels of social and sexual conservatism may be less likely to seek treatment for a STI. Their hypotheses were supported by observed correlations among attitudes towards women, sexual conservatism, and increased stigma toward STIs (Foster & Byers, 2008). Foster and Byers (2008) also found that only a limited range of sexual behaviors were considered acceptable by most individuals and that STIs signified immorality, as measured by the Attitudes Towards Women Scale (Spence, Helmreich, & Stapp, 1973), the Sexual

Attitudes Scale (Hudson et al., 1983), and the STI-Related Stigma and Shame Scale. This research suggests that STI-related stigma is related to social and sexual conservatism as well as attitudes toward women and morality.

### **Women and STI related Stigma**

According to Foster and Byers (2008), a component of STI-related stigma is STI-related shame, which is defined as a “negative effect that an individual experiences as the result of internalizing stigma” (p. 193). Waller, Marlow, and Wardle (2006) and Foster and Byers (2008) found through their research with female participants, STI-related shame might cause women to believe that they would be viewed negatively or that their actions would cause them to be deemed immoral. STI-related shame is especially felt at the time a STI diagnosis is revealed by the health care provider (Foster & Byers, 2008). East, Jackson, Peters, and O’Brien (2010) found that a STI diagnosis can be a physical and psychological burden that can place pressure and strain on intimate relationships (East et al., 2010). Specifically, among the 10 STI-positive women they interviewed, East et al. (2010) found that participants did not believe themselves to be at risk of contracting a STI as they did not feel they were the type of person who would contract a STI. East et al. (2010) also found that women reported classifying other women with a diagnosis of a STI as promiscuous or sexually deviant until they had received a diagnosis themselves or someone in their close personal circle had received such a diagnosis. Women who received a STI diagnosis became more empathetic of others in the same position as measured through online interviews with heterosexual women ages 18 to 30 who had contracted a STI through sexual intercourse (East et al., 2010). Analysis of those interviews found that women with a STI diagnosis internalized new feelings of self-

blame and denial, leading to increased levels of shame. Importantly, Foster and Byers (2008) found that those who reported higher levels of shame were less likely to get tested for STIs and less likely to disclose a positive test to current or future partners.

Increased stigma surrounding women and STIs may be a barrier to testing (Cook, 2013). Chacko, Von Sternberg, Velasquez, Wiemann, Smith, and DiClemente (2008) asked young women to complete an exercise to evaluate the pros and cons of testing for chlamydia or gonorrhea. Participants rated the pros of a community-based health clinic to include: being confidential, free, and that both diagnosis and treatment could be made on-site, suggesting that confidential, free, on-site diagnosis and treatment for STIs may decrease barriers to testing. As with Barth et al.'s (2002) study, Chacko et al. (2008) found that perceived negative consequences such as embarrassment, partner trust, confidentiality, and time posed barriers for young women to be tested. Wong, Chan, Boi-Doku, and McWatt (2012) assessed barriers to treatment in women aged 16 to 24 through group interviews using case scenarios in which a person had contracted chlamydia. Thematic analysis of the interviews revealed that fear impedes testing, particularly fears related to misconceptions of STIs and their ability to be cured. Wong et al. (2012) found that STIs were associated with negative social consequences, such as shame and guilt, as well as fear that the individual with a STI would be labeled something derogatory, such as a "whore" or "slut". Thus, the research indicates that young women endorse a myriad of factors, which discourage them from seeking health care, testing, or treatment of STIs.

### **Mental Illness and Stigma**

Mental disorders, which are often referred to more globally as "mental illness", are behavioral or psychological problems that occur outside of normal stress or life

events and may result in dysfunction in psychological, biological, or developmental functioning (American Psychological Association, 2013). One in five adults will live with a mental illness. In 2017, an estimated 18.9% (i.e., 46.6 million) of all adults in the United States were diagnosed with a mental disorder (National Institute of Mental Health, 2019).

Like STI stigma, people with mental illness face stigma that is experienced both internally and externally. Brown et al. (2010) hypothesized that all disorders are stigmatized, regardless of the diagnosis and that those with mental illness are negatively depicted as “less competent, childlike, or violent” (p. 187). According to Wahl (1999), people with mental illness are portrayed in the media as unable to control their disabilities or are viewed as responsible for them. These negative depictions may perpetuate the stigma placed on those living with mental illness and the way those with mental illness are treated in society (Brown et al., 2010). People with mental illness may experience stigma through institutional discrimination, such as increased difficulty obtaining and maintaining employment and housing (Penn, Guynan, Daily, Spaulding, Garbin, & Sullivan, 1994; Sickel et al., 2014). Spagnolo et al. (2008) further theorized that mental illness stigma may impact one’s self-esteem, self-efficacy, and interpersonal relationships. Penn et al. (1994) found that compared with those who had had previous contact with someone with a mental illness, those with no prior contact were more likely to consider someone with a diagnosis of depression or schizophrenia as more dangerous than someone without such a diagnosis and would seek greater social distance from someone with a diagnosis of mental illness.

Mental illness stigma may also affect willingness to seek treatment. Corrigan (2004) theorized that stigma may impact treatment through socio-cultural cues such as stereotyping, prejudice, and discrimination which, then, cause people to avoid the diagnosis of mental illness in order to avoid stigma. Through the use of vignettes, Stuber, Rocha, Christian, and Link (2014) found that mental health professionals had significantly more positive attitudes towards those with mental illness than did the general public. However, even within the community of mental health professionals, program managers were more likely than case managers to perceive an individual with schizophrenia presented in a vignette as less competent and more dangerous than a similar vignette that depicted someone with depression. Through the use of directed focus groups with health professionals and patients, Cooper-Patrick, Powe, Jenckes, Gonzales, Levine, and Ford (1997) found that access to treatment, patient-provider relationships, social support, and the perception of stigma were all factors that impacted a patient's willingness to seek help. Importantly, stigma was reported as being a more significant barrier to treatment among Black patients than White patients, suggesting that cultural- or ethnicity-based biases may also play a role in treatment-seeking behavior. Watson et al. (2007) evaluated the self-stigma of patients with schizophrenia, bipolar disorder, or major depression via questionnaires including three measures of self-stigma; Self-Stigma of Mental Illness, Group Identification, and Perceived Legitimacy created by Watson et al. (2007), as well as measures of self-esteem and self-efficacy. In that study, the more aware of public stigma the participant was, the less likely they were to perceive such stigma as legitimate, indicating that stereotype awareness may decrease self-stigma. These findings emphasize the importance of the ways in which stigma may impact those

with mental illness, including how stigma may impact treatment and how both self-stigma and public stigma may be reduced.

### **Stigma Reduction**

There are a number of ways in which stigma can be reduced. Spagnolo et al. (2008) evaluated three methods of stigma reduction in mental illness: 1) education with accurate information about mental illness and treatments; 2) having people who have sought treatment for mental illness and a mental health professional present this information; and 3) emphasizing personal stories of recovery and real-life examples. The study, done with high school students, used an Attribution Questionnaire pre- and post-session to evaluate the students' attitudes toward mental illness. Spagnolo et al. (2008) found that when all three stigma reduction methods were employed through a one-hour session, students were less likely to stigmatize those with mental illness than students who did not receive this session. Based on these findings, it appears that accurate information, exposure to people with mental illness, and real-life examples are vital in stigma-reduction education.

Corrigan et al. (2001) also used three approaches to reducing mental illness stigma, with participants being assigned to one of the following categories: 1) education; 2) contact; 3) suppression of stigmatizing attitudes; and 4) a control group. Corrigan et al. (2001) further evaluated the differences in stigma level among varying mental illnesses compared to cancer. Education and contact significantly changed attitudes of participants, while protest or suppression of negative attitudes did not. Additionally, cancer was less stigmatized than all mental illness conditions. Fife and Wright (2000) also found that cancer was less stigmatized than HIV/AIDS. Through self-report, Fife and Wright (2000)

found that those with HIV/AIDS felt greater social rejection, financial insecurity, internalized shame, and social isolation than those with cancer. Greene and Banjeree (2006) evaluated the stigma of cancer and HIV/AIDS with variables including attitudes towards homosexuality, religiosity, authoritarianism, and androgyny. Those researchers found that individuals with negative attitudes towards homosexuality, high religiosity, and authoritarianism had more negative attitudes towards those with HIV/AIDS and were less likely to interact with someone with HIV/AIDS while attitudes toward homosexuality, religiosity, authoritarianism, or androgyny did not significantly correlate with attitudes toward cancer or level of contact with cancer. Though cancer may be stigmatized, it is less stigmatized than other illness.

In medical settings, personal narratives have been used to evoke empathy in participants to reduce stigma. DasGupta and Charon (2004) hypothesized that empathy could be taught through reflective writing in medical students and, through qualitative analysis, found that personal illness narratives that were emotionally challenging resulted in medical students being better able to articulate the emotions and feelings involved with illness. Batson et al. (1997) used an empathy prime to evoke empathy as a stigma-reduction tool. Participants were either given a high-empathy prime or low-empathy prime and were then instructed to listen to a narration of someone detailing their life with HIV. Those in the high empathy prime were asked to think about the feelings of the narrator and imagine what it must be like to have the illness, whereas those in the low empathy condition were asked to listen objectively and only for facts. Participants were then given an attitude assessment to evaluate attitudes and stigma toward people with HIV. Those with the high empathy prime had more positive attitudes and stigmatized

those with HIV less than did participants given the low empathy prime (Baston et al., 1997). Increasing empathy, education with accurate information, and creating more positive attitudes towards in stigmatized populations may all be effective in reducing stigma.

### **Current Hypothesis**

The purpose of the current study was to investigate if increasing empathy would decrease the stigma toward populations with illness. Further, this study examined differences in the level of stigma among three illnesses: 1) STIs; 2) mental illness; and 3) cancer. It was hypothesized that participants would stigmatize those with cancer less than those with a STI or mental illness. It was also hypothesized that those given a high-empathy prime would stigmatize those with an illness less than those participants presented with a low-empathy prime. Lastly, it was hypothesized that the empathy prime would interact with illness type such that attitudes toward those with cancer would not necessarily change but attitudes toward those with STIs and/or mental illness would be improved.



## CHAPTER III

### METHOD

#### Participants

Participants in this study included 184 students at Central Washington University (CWU). Participant ages ranged from 18 to 24 years of age ( $M = 20.5$ ,  $SD = 1.9$ ) with the majority of participants reporting Caucasian ethnicity. Demographic information, including year in school and ethnicity are reported in Table 1. Participants were recruited through the online research participation board in the Department of Psychology, allowing students the opportunity to earn extra credit in psychology courses in exchange for participating in research. All procedures were approved by the institutional Human Subjects Review Council (HSRC).

Table 1

*Frequency and Percentage of Participants for Demographic Categories (N = 184)*

Demographic Categories	Frequency (n)	Percentage (%)
Gender		
Female	126	68.5
Male	54	29.3
Other	4	2.2
Race		
Caucasian/White	139	75.5
Latino	17	9.2
African American/Black	9	4.9
Multiracial	8	4.3
Asian/Pacific Islander	4	2.2
Native American	1	0.5
Other or rather not say	6	3.3
Year in School		
First-Year	45	24.5
Second-Year	43	23.4
Third-Year	53	28.8
Fourth-Year	36	19.6
Fifth-Year +	6	3.3
Graduate student	1	0.5

## **Materials**

The current study examined the impact of empathy levels, manipulated through priming, and type of illness on subsequent measures of stigma in response to a vignette about an individual with an illness. The type of illness presented in the vignette included 1) mental illness, 2) STI, or 3) cancer. As noted in the literature review, mental illness and STIs are highly stigmatized populations while cancer is associated with lower levels of stigma; therefore, cancer was used as a control condition.

**Priming Instructions.** Participants were primed with one of two different instructions: 1) a low-empathy condition; or 2) a high-empathy condition. The priming instructions utilized in the current study were modeled on instructions created by Batson et al. (1997) and asked participants to either take an objective approach (i.e., low-empathy) when reading the vignette or to imagine how the person feels (i.e., high-empathy). The instructions were consistent with Batson et al. (1997) except “objective perspective” was replaced with “unemotional perspective” in order to minimize potential vocabulary barriers.

[Low-empathy prime:] On the next screen, you will see a journal entry. While reading, take an unemotional perspective toward what is described. Try not to get caught up in how the person who wrote the following feels; just remain detached.

[High-empathy prime:] On the next screen, you will see a journal entry. While reading, imagine how the person who wrote the following feels about what happened and how it has affected their life. Try to feel the full impact of what this person has been through and how they feel as a result.

**Vignette.** All participants read a vignette and responded to it. The original vignette was created by Batson et al. (1997) to evoke empathy in participants. Batson et al.'s study used an audio-recording of an interview in which a young woman described her experience after being diagnosed with HIV. For the purpose of the current study, the vignette was presented in written form in order to eliminate potential bias due to the gender of the speaker and referenced one of three illnesses: 1) STI; 2) mental illness; or 3) cancer. Unlike Batson et al.'s (1997) original vignette, the vignette used in the current study also removed references that the person in the vignette contracted their illness through reckless behaviors as well as specific references to a physical ailment. The goal of the vignette was to provide a narrative approach to the feelings associated with illness and how one who has been diagnosed with an illness copes with the disease and diagnosis.

As noted, the original vignette used by Batson et al. (1997) described the feelings that the narrator had regarding an HIV diagnosis received three months prior, as well as her fears and worries about other people learning about her illness. The modified vignette that was used in the current study retained the emphasis on the narrator's subjective response to their diagnosis but, as noted, removed references to HIV. Thus, the vignette for the current study was:

Well, as you can imagine, being diagnosed with a [STIs/mental illness/cancer] is pretty terrifying. I mean, every time I feel a bit run down, I wonder, is this it? Is this the beginning -you know- of the slide? Sometimes I feel pretty good, but in the back of my mind it's always there. Any day I could take a turn for the worse. And I know that – at least right now- there's no escape. I know they're trying to

find a cure – and I know that we all die. But it seems so unfair. So horrible. Like a nightmare. I mean, I feel like I was just starting to live, and now, instead, I feel like I am dying. It can really get you down.

A lot of thoughts cross my mind. I worry about what might happen if my friends at work or my boss find out that I have this disease. I also worry about my medical bills. Like I said, it can really get you down.

**Modified Attitude Questionnaire.** After reading the vignette, participants completed questionnaires designed to measure different aspects of stigmatization. An attitude questionnaire, modeled on Batson et al.'s (1997) Attitude Questionnaire: AIDS Victims, which was originally adapted from McConahay's (1986) Modern Racism Scale, was used to assess the participants' beliefs or feelings towards people diagnosed with a disease (see Appendices B through D). For the purposes of the current study, the word "AIDS" in the questionnaire was changed to either "Mental Illness," "STI," or "Cancer," depending on the condition to which each participant was randomly assigned. The scale used a 9-point Likert scale from 1 (*strongly disagree*) to 9 (*strongly agree*) with seven items assessing attitudes towards people with illness, including beliefs about the person and feelings toward individuals with illness. Example items include "For most people with a mental illness, it is their own fault that they have a mental illness," and "How much do you personally care about the plight of people with cancer?" A higher score indicates a more positive attitude toward people with the illness. Two of the items are reverse-scored.

Batson et al. (1997) reported a Cronbach's  $\alpha$  of 0.78 for a sample of female undergraduates and used the Attitude Questionnaire in two subsequent experiments,

modifying the language to evaluate attitudes towards the homeless and convicted murderers. Cronbach's  $\alpha$  for the attitude questionnaire in these subsequent studies were 0.87 and 0.70, respectively. The Attitude Questionnaire was positively correlated with a five-item attitude index measuring attitudes towards people with HIV, where  $r = .36$  (Batson et al., 1997). In the current study, Cronbach's  $\alpha$  for the Modified Attitude Questionnaire was 0.84.

**Devaluation-Discrimination Scale (DD).** The DD assesses how an individual may devalue or discriminate against a stigmatized population (Link et al., 1989). The scale items include questions about how close most people may become to someone with mental illness, how employers may treat them, or how they may be viewed in the community. The 12-item measure uses a 6-point Likert scale from 1 (*strongly agree*) to 6 (*strongly disagree*) to assess devaluation and discrimination. Half of the items are reverse-scored. The midpoint of the scale is 3.5, and a mean score above 3.5 indicates endorsement of the items, indicating higher perceived discrimination and devaluation by others of the target population. Link et al. (1989) reported adequate internal consistency ( $\alpha = .76$ ). In a study by Hackler (2012), Cronbach's  $\alpha$  was also reported at 0.76 in a sample of community residents or psychiatric patients. Aromaa, Tolvanen, Tuulari, and Wahlbeck (2011) reported that the DD was the most often used measure of personal experience with mental illness in research on stigma. According to Hackler (2012), the DD has been correlated with other stigma measures, including Stigma-Withdrawal scale, Stigma-Secrecy Scale, the Self-Stigma of Seeking Help Scale, and the Social Distance Scale (Link et al., 1989; Link & Phelan, 2001; Vauth, Kleim, Wirtz, & Corrigan, 2007; Vogel, Wade, & Hackler 2007).

The current study used a modified version of the DD in which “I” statements were presented. Items included questions such as “I would willingly accept a former mental patient as a close friend,” “I think less of a person who has been in a mental hospital,” and “I would be reluctant to date someone who has been hospitalized for a serious mental disorder.” In the current study, the words “former mental patient” or indications that the person has been admitted to a psychiatric hospital were changed to “mental illness,” “STI,” or “cancer” depending upon the condition (see Appendices E through G). Cronbach’s  $\alpha$  for the DD was 0.82.

**Perceptions of Stigmatizations by Others for Seeking Help (PSOSH).** Vogel, Wade, and Hackler (2007) constructed a measure to evaluate the stigmatization of seeking psychological help among college students. The 5-item scale includes questions focused on others’ perceptions of help-seeking behavior, such as someone reacting negatively or thinking of someone less favorably due to seeking treatment. The original scale was developed to measure self-stigma, though it has been used in other studies to measure perceived stigma from others. The internal consistency of the PSOSH is high, with reported Cronbach’s  $\alpha$  of .89. During test construction, Vogel et al. (2007) evaluated the measure over five samples, all of which showed good internal consistency and test-retest reliability.

Hackler (2012) modified this instrument to evaluate the perceived stigma of others seeking help rather than themselves. The 5-item scale uses a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*a great deal*). The 5-item scale was used in the current study (see Appendix D) with higher scores indicating greater stigma. Hackler (2012) reported reliability measures consistent with those of Vogel et al. (2007), with

Cronbach's  $\alpha$  of 0.86 in Hackler's (2012) study and Vogel et al.'s (2007) study reporting Cronbach's  $\alpha$  from 0.78-0.91. Validity was indicated by positive correlations between this scale and public stigma towards counseling and self-stigma as well as negative correlation with the DD. In the current study, Cronbach's  $\alpha$  for the PSOSH was 0.85.

### **Design**

The current study used a 2 (Empathy: High, Low) x 3 (Illness: STI, Mental Illness, Cancer) between-subjects factorial design to assess the impact of empathy level and type of illness on stigmatization. Empathy was manipulated using a low- or high-empathy prime. The illness variable was manipulated among three conditions: 1) STI; 2) mental illness; and 3) cancer. Stigma assessed via participant responses to the Modified Attitude Questionnaire, DD, and PSOSH.

### **Procedure**

After reading the study description posted on the Department of Psychology's online research board, participants selected to begin participation in the study. Participants read through the instructions and informed consent and, if they chose to participate, affirmed that they were between the ages of 18 and 24 years, a current CWU student, and consented to participate in the study. All materials were presented via Qualtrics software. Each participant was randomly assigned to one of three illness conditions: 1) STI; 2) mental illness; or 3) cancer. In addition, each participant was randomly assigned to one of two empathy priming instructions. After the empathy prime, participants read the vignette and respond to the Modified Attitude Questionnaire, DD, and PSOSH. The three scales were presented in counterbalanced order. After completing the scales participants, provided demographic information (see Appendix A) and were

asked about their level of familiarity with the illness presented in the vignette as well as to name the specific disease or disorder they associated with the vignette and the subsequent questionnaires (e.g., herpes, lung cancer, schizophrenia). As a manipulation check on the empathy prime, participants were asked to rate via a 5-point Likert scale how much empathy they felt for the narrator of the vignette from 1 (*felt no empathy*) to 5 (*felt a lot of empathy*). Lastly, participants were presented with a comment box to provide feedback regarding the study. Following the completion of the demographics and manipulation check section, the participant was debriefed.

### **Statistical Analysis**

Each participant generated the following data: 1) An average Modified Attitude Scale score, with higher scores reflecting a less positive attitude toward someone with illness (i.e., scale was reverse-coded for consistency among measures in the current study); 2) an average DD score with higher scores interpreted as greater endorsement of devaluation or discrimination towards the narrator of the vignette; 3) an average PSOSH score with higher scores reflecting more stigmatization; 4) demographic information; 5) a manipulation check self-reported empathy score; 6) a self-reported familiarity with the illness score with higher scores reflecting greater familiarity with the illness presented in the vignettes; and 7) a qualitative response to the query of what specific illness was depicted in the vignette. To test the experimental hypothesis, a multivariate analysis of covariance (MANCOVA) was conducted using the empathy prime (high-empathy versus low-empathy) and the type of illness presented in the vignette (mental illness, STI, cancer) as independent variables. The dependent variables were scores on the: 1) Modified Attitude Questionnaire; 2) DD; and 3) PSOSH. Covariates were reported



familiarity with the illness presented in the vignette and self-reported empathy score.

Qualitative responses to the question of the type of illness were categorized by frequency.

It was hypothesized that participants would show less stigmatization of those with cancer than those with a STI or a mental illness. Additionally, it was hypothesized that the high-empathy prime would improve attitudes towards mental illness and a STI compared to the low-empathy prime. Lastly, it was hypothesized that the empathy prime and type of illness would interact such that empathy priming would not alter stigmatization of those with cancer but would improve attitudes toward those with mental illness and STIs.

CHAPTER IV  
RESULTS

A total of 184 participants completed the survey. Mahalanobis distance was used to identify multivariate outliers and resulted in five participants being removed, resulting in a total of 179 participants. As previously noted, the Modified Attitude Questionnaire was reverse-coded so that higher scores reflected more stigmatization in order to have directional consistency among measures. Descriptive and correlational data for the Modified Attitude Questionnaire, DD, PSOSH are presented in Table 2 in addition to self-reported empathy for the person in the vignette on a 4-point scale and familiarity with the illness presented in the vignette on a 4-point scale.

Table 2

*Descriptive and Correlational Statistics for Stigmatization Measures and Covariates (N 179)*

	<i>M</i>	<i>SD</i>	2	3	4	5	6	7
1. Gender			-.01	-.18 <sup>c</sup>	.10	-.09	.00	.02
2. Age	20.6	1.9		.06	.01	.09	.04	.09
3. Empathy	3.1	0.8			.34 <sup>a</sup>	-.44 <sup>a</sup>	-.35 <sup>a</sup>	-.23 <sup>b</sup>
4. Illness familiarity	2.5	0.9				-.27 <sup>a</sup>	-.33 <sup>a</sup>	-.19 <sup>c</sup>
5. Modified Attitude Questionnaire*	3.2	1.4					.35 <sup>a</sup>	.38 <sup>a</sup>
6. DD	1.7	0.5						.54 <sup>a</sup>
7. PSOSH	1.2	0.4						

\*Measure was reverse-coded, higher scores reflect more stigmatization

<sup>a</sup> $p < 0.001$ ; <sup>b</sup> $p < 0.005$ ; <sup>c</sup> $p < 0.05$

As noted in Table 2, the three stigmatization measures correlated with one another. Both self-reported empathy for the person in the vignette and familiarity with the illness presented in the vignette negatively correlated with all three measures of stigmatization. Thus, increased self-reported empathy and familiarity with the type of illness presented in the vignette were correlated with lower stigmatization. In addition, while age did not correlate with any of the dependent measures or covariates, gender ( $1 = female, 2 = male$ ) correlated with self-reported empathy; women tended to have higher self-reported empathy than did men. Empathy also positively correlated with familiarity with the illness presented in the vignette.

A 2 (Low-Empathy, High-Empathy) x 3 (Cancer, STI, Mental Illness) MANCOVA with the covariates of self-reported empathy and familiarity with the illness in the vignette assessed the effects of the independent variables and covariates on the combined dependent variables of the Modified Attitude Questionnaire, DD, and PSOSH. Gender was initially included as an independent variable but was removed from subsequent analyses due to non-significant effects on the combined dependent variable. A significant Box's  $M$  test ( $p = .00$ ) indicated that Pillai's Trace should be utilized. The MANCOVA revealed that the covariate of self-reported empathy significantly influenced the combined dependent variable,  $Pillai's Trace = .190, F(3, 171) = 13.39, p < .001, partial eta-squared = .190$ , as did the independent variable of type of illness,  $Pillai's Trace = .614, F(6, 344) = 25.41, p < .001, partial eta-squared = .307$ .

Analyses of covariance (ANCOVA) were conducted on each dependent variable as follow-up tests to the MANCOVA. The covariate of self-reported empathy

significantly influenced the Modified Attitude Questionnaire,  $F(1, 173) = 36.80, p < .001$ ,  $partial\ eta\ squared = .197$ , DD,  $F(1, 173) = 17.61, p < .001$ ,  $partial\ eta\ squared = .124$  and PSOSH scores,  $F(1, 173) = 5.14, p < .05$ ,  $partial\ eta\ squared = .039$ . The covariate of familiarity with the illness in the vignette significantly influenced Modified Attitude Questionnaire,  $F(1, 173) = 5.67, p < .05$ ,  $partial\ eta\ squared = .048$ , and DD scores,  $F(1, 173) = 4.05, p < .05$ ,  $partial\ eta\ squared = .023$ . The type of illness significantly affected all three stigmatization measures [Modified Attitude Questionnaire:  $F(2, 173) = 48.16, p < .001$ ,  $partial\ eta\ squared = .328$ ; DD:  $F(2, 173) = 17.37, p < .001$ ,  $partial\ eta\ squared = .199$ ; PSOSH:  $F(2, 173) = 9.09, p < .001$ ,  $partial\ eta\ squared = .064$ ] but the empathy prime had no effect on any of the measures. An analysis of variance (ANOVA) showed no main effect of the empathy prime on self-reported empathy,  $F(1, 177) = 2.5, p = .12$ , underscoring the lack of effect of the empathy manipulation. Table 3 presents descriptive statistics of the stigmatization measures by empathy condition.

Table 3

*Descriptive Statistics for the Stigmatization Measures by Empathy Condition (N = 179)*

	<i>n</i>	Modified Attitude Questionnaire		DD		PSOSH	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Cancer							
Low empathy	31	2.9	0.9	1.4	0.4	1.0	0.0
High empathy	32	2.6	1.1	1.4	0.3	1.1	0.2
STI							
Low empathy	29	4.5	1.4	1.9	0.6	1.5	0.5
High empathy	27	4.2	1.3	1.6	0.3	1.2	0.3
Mental illness							
Low empathy	31	2.3	1.1	1.8	0.5	1.2	0.4
High empathy	29	2.8	1.1	2.1	0.5	1.3	0.4

Newman-Keuls post-hoc comparison follow-up of the main effects of illness type for each dependent measure revealed that cancer vignettes had lower scores/stigmatization than both STI and mental illness vignettes on the DD ( $ps < .0005$ ) and PSOSH ( $ps < .005$ ). On the Modified Attitude Questionnaire, both cancer and mental illness vignettes yielded lower stigmatization than did the STI vignettes ( $ps < .0001$ ). On the PSOSH, STI vignettes tended toward higher stigmatization than mental illness vignettes ( $p = .05$ ). In contrast, on the DD, STI vignettes had lower stigmatization than did mental illness vignettes ( $p < .005$ ). Table 4 presents descriptive statistics of the stigmatization measures in addition to empathy and familiarity scores.

Table 4

*Descriptive Statistics for Stigma and Covariate Measures by Type of Illness (N = 179)*

	Cancer ( <i>n</i> = 63)		STI ( <i>n</i> = 56)		Mental Illness ( <i>n</i> = 56)	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Modified Attitude Questionnaire	2.7	1.0	4.4	1.3	2.5	1.1
DD	1.4	0.4	1.7	0.5	2.0	0.6
PSOSH	1.0	0.1	1.3	0.4	1.2	0.4
Self-reported empathy	3.2	0.8	2.9	0.8	3.0	0.7
Familiarity with illness	2.9	0.9	2.4	0.9	2.3	0.9

Lastly, responses to the specific disease or disorder each participant associated with the vignette were categorized by frequency for each illness subtype in order to evaluate the types of disorders participants associated with each illness category (i.e., STI, cancer, mental illness). One participant did list multiple responses, one participant also put N/A, possibly indicating they had not specified an illness. Table 5 presents named disorders and their frequency.

Table 5

*Frequency Table for Specific Perceived Illness in Each Illness Category (N = 179)*

STI ( <i>n</i> = 57)	Count	Percent of Sample
HIV/AIDS	27	47.4
STI	7	12.3
Herpes	7	12.3
No Response	7	12.3
Chlamydia	4	7.0
Chlamydia/Herpes	1	1.8
Genital Herpes	1	1.8
Syphilis	1	1.8
AIDS/Herpes/Gonorrhea	1	1.8
Gonorrhea	1	1.8
<hr/>		
Mental Illness ( <i>n</i> = 57)		
Depression	19	31.2
Bipolar Disorder	5	8.2
No Response	5	8.2
Mental Illness	4	6.6
Autism	4	6.6
Schizophrenia	4	6.6
Anxiety	3	4.9
Depression/Anxiety	3	4.9
Downs Syndrome	1	1.6
Depression/Schizophrenia	1	1.6
Depression/Alzheimer's	1	1.6
Paranoid Schizophrenia	1	1.6

ADHD	1	1.6
Alzheimer's	1	1.6
Mental Retardation	1	1.6
Borderline Personality Disorder	1	1.6
RAD/PTSD	1	1.6
Spectrum Disorders	1	1.6
Dyslexia	1	1.6
Mood Disorder	1	1.6
Alcoholism, depression, anxiety	1	1.6
NA	1	1.6
<b>Cancer (<i>n</i> = 63)</b>		
<hr/>		
Cancer	39	66.1
Breast Cancer	5	8.8
Depression	2	3.4
Lung Cancer	2	3.4
Leukemia	2	3.4
Pancreatic Cancer	2	3.4
Brain Cancer	1	1.7
Liver Cancer	1	1.7
Bladder Cancer	1	1.7
Breast Cancer	1	1.7
Addiction	1	1.7
Ovarian Cancer	1	1.7
No Response	1	1.7
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## CHAPTER V

### DISCUSSION

The current study examined if increasing empathy would decrease stigma in populations diagnosed with illness. Further, this study examined if there was a difference in levels of stigmatization among three illness groups, those diagnosed with STIs, mental illness, or cancer. Participants were given one of two different instructions, one being a high-empathy condition and the other being the low-empathy condition. They were then instructed to read a vignette that referenced being diagnosed with one of the following illnesses: 1) STI; 2) mental illness; or 3) cancer. Once they read the instructions and vignette, participants were asked to respond to three questionnaires assessing their attitudes toward the illness presented in the vignette. They also responded to a brief series of demographic questions, two questions assessing their familiarity and feelings toward the illness presented, and were asked which specific illness they felt was represented in the vignette.

The questionnaires used in the study were used to assess the stigma individuals attached to different illnesses. As stated previously, the Modified Attitude Questionnaire assesses attitudes and beliefs towards people who are ill, the DD examines how individuals may devalue or discriminate against ill individuals at home, work, or in community. The PSOSH scale measures attitudes towards individuals who seek help for a diagnosis (Batson et al., 1997; Link et al., 1989; Vogel et al., 2007). In this study, these measures were used to evaluate how individuals stigmatize others with illness, specifically STIs, mental illness, and cancer. The current study hypothesized that participants would show less stigmatization to those with cancer than those with an STI



diagnosis or mental illness. Additionally, it was hypothesized that the high empathy prime would reduce the level of reported stigma compared to the low-empathy prime. It was further hypothesized that the empathy prime would not impact the stigmatization of cancer but would improve attitudes towards individuals with STIs or mental illness.

Increased self-reported empathy and familiarity with the illness presented in the vignette was associated with decreases in all three measures of stigmatization. In the current study, rates of self-reported familiarity and empathy with the illness presented in the vignette significantly influenced scores on the Modified Attitude Questionnaire and DD while self-reported empathy also influenced scores on the PSOSH, suggesting that stigmatization of all the diseases in the current study decreased with heightened familiarity and empathy. These findings are consistent with prior research demonstrating that stigma is reduced through education with accurate information and contact with individuals experiencing that stigma (Corrigan et al., 2001; Spagnolo et al., 2008). Furthermore, cancer resulted in the lowest stigmatization scores which is consistent with prior research (Corrigan et al., 2001; Fife & Wright, 2000). Lastly, the three stigmatization measures used in the current study, the Modified Attitude Questionnaire, PSOSH, and DD, all correlated with one another, suggesting overlapping constructs in their measurement of stigmatization.

### **Empathy**

The empathy prime used in the current study was intended to examine if increasing empathy would decrease stigmatization by encouraging participants to feel what the narrator of the vignette felt. Contrary to the proposed hypothesis, there were no effects or interactions of the empathy prime on stigmatization scores nor did the empathy

prime alter self-reported empathy scores. In the original study by Batson et al. (1997), empathy priming reduced stigmatization of someone with HIV. The formatting and language of Batson et al.'s vignette was specific for HIV and discussed how HIV was contracted, in order to better evaluate the impact of perceived victim responsibility on stigmatization in that study. In the current study, the instructions for the empathy prime were slightly modified to improve readability ratings which reduced the length of the vignette. These refinements may have, inadvertently, removed information that was necessary for the empathy prime to be effective. Alternatively, the language used in Batson et al. (1997) may have been specific to HIV stigmatization, which may have been more pronounced two decades ago and was not effective when altering empathy levels for the illnesses depicted in the current study.

While the empathy prime used in the current study did not alter stigmatization scores nor self-reported empathy, self-reported empathy was a strong mediator of the dependent measures, significantly influencing all three measures of stigmatization. Self-reported familiarity with the illness in the vignette also influenced scores, but on only two of the stigmatization measures, the Modified Attitude Questionnaire and DD. As previously noted, familiarity has been shown to be a stigma reduction tool (Corrigan et al., 2001; Spagnolo et al., 2008) and self-reported empathy and familiarity were correlated in the current study. Thus, the current findings clearly add to a body of research indicating that familiarity and empathy are essential to decreasing stigmatization. Importantly, DasGupta and Charon (2004) suggest that empathy can be taught through writing tasks that evoke empathy. Future research may benefit from

having the participant write the narrative themselves rather than read a narrative in an effort to alter feelings of empathy.

## **Gender**

In the current study, gender was associated with empathy ratings with women having higher self-reported empathy than men. This is consistent with research findings that women report higher rates of empathy than men (Batson et al., 1997; Gault & Sabini, 2000; Toussaint & Webb, 2005). According to Christov-Moore, Simpson, Coude, Grigaityte, Iacoboni, and Ferrari (2014), gender differences in empathy may have an evolutionary component, being an essential component to strong parental bonds and with females being predisposed to care for offspring. Christov-Moore et al. (2014) suggests that emotional contagion, facial recognition and emotion recognition, as well as mirror neuron responses may all contribute to increased empathy in females over males. Horgan and Smith (2006) theorized there may be a motivational component, with women needing to fit a societal narrative of being a sympathetic female who understands the needs and feelings of others, whereas men do not endorse this need (Horgan & Smith, 2006; Klein & Hodges, 2001).

Regardless of the underlying biological or psychological processes for gender differences in empathy, the current finding that gender was associated with self-reported empathy is particularly impressive given that participants were unable to see what the narrator in the vignette looked like or to see their facial expressions, suggesting that female participants responded with greater empathy even in the absence of physical contact with the person with whom they empathized. Importantly, gender differences were not observed with regard to stigmatization of those in the vignette, indicating that

when empathy levels are controlled for as a covariate in statistical analyses, men do not engage in greater stigmatization of others.

### **Differences in Stigmatization due to Illness Type**

As initially predicted, the type of illness depicted in the vignettes significantly affected all three measures of stigmatization. On the Modified Attitude Questionnaire, both cancer and mental illness had lower stigmatization scores than STIs. On both the PSOSH and DD, cancer resulted in the lowest stigmatization scores but, in the PSOSH, the STI condition was more stigmatized than mental illness while, on the DD, mental illness was stigmatized more than the STI condition. The finding that cancer received the lowest amount of stigmatization was consistent with the proposed hypothesis. Prior research suggests that mental illness and STIs are both invisible illnesses that experience both internal and external stigma (Foster & Byers, 2008). Due to participants being recruited through psychology courses, they may have had more familiarity with mental illness and mental health stigma, and less familiarity or experience with STIs, potentially explaining why, across two of the three stigma measures, STIs were stigmatized more than mental illness.

However, as noted, while the type of illness significantly affected scores on the DD scale, STIs had lower reported stigma on this scale than did mental illness. The DD scale examines how participants may feel about having an individual care for their children, if they would hire someone diagnosed with a disease, and if they would have someone with one of these illnesses as a close friend (Link et al., 1989). While the other questionnaires assessed attitudes towards affected individuals, the DD asked scenario-based questions about having a person with a diagnosis work or live in close proximity to

the respondent. One possible explanation for mental illness being more stigmatized on this scale and not the other scales may be due to this question format. The original questionnaire was designed to specifically examine stigmatization of mental illness and, therefore, may be more sensitive to stigmatization of that type of illness (Link et al., 1989).

Importantly, while the PSOSH and Modified Attitude Questionnaire assess attitudes towards stigmatized individuals and the DD evaluates personal experience or closeness with a person, all three stigmatization measures showed high internal consistency and were positively correlated with one another in the current study; findings consistent with prior use of these tools. (Batson et al., 1997; Link et al., 1989; Vogel et al., 2007). Thus, while the specific relative degree of stigmatization may have varied slightly between mental illness and STIs among the three measures, the current findings support the extensive literature indicating that these scales evaluate stigmatization, demonstrating convergent validity via their strong correlations with one another. Furthermore, strong correlations across scales were demonstrated even under conditions in which minor, small wording changes to the items were required in order to list the specific illness under inquiry for each participant, further underscoring the utility of these scales in measuring stigmatization.

Stigma must first be measured in order to reduce stigmatization. The current study sought to understand if there was a difference in the way that illnesses are stigmatized and if empathy as a prime may reduce the level of stigma. When left untreated, each of the illnesses presented in the current study can be life-threatening. When people with these illnesses feel that that they are a burden to others or fear retaliation, they are less

likely to seek treatment (CDC, 2014; Cunningham et al., 2009). While these illnesses seem different, the way that they are often experienced is similar, particularly STIs and mental illness in that these illnesses are not visible and have unique stigma associated with them (Spagnolo et al., 2008). However, they are both treatable, livable conditions. Often, people with these illnesses feel they are to blame (East et al., 2010). Others may judge them or have biases about who they are based off these diagnoses (Foster & Byers, 2008). This can be extremely problematic for individuals already experiencing a health issue. By seeking to understand how others stigmatize these groups, researchers may, then, work to understand how to further reduce stigma in these populations.

Cancer was the control illness in this study and, as predicted, resulted in lower rates of stigma than did vignettes focused on mental illness and STIs. One reason for this difference in stigmatization among disorders may be the influence of victim blaming. Both STIs and mental illness have been characterized as being fault of the person with the diagnosis (Batson et al., 1997; Corrigan, Watson, & Miller, 2006). In contrast, cancer does not typically have this component of blame that may increase stigmatization (Corrigan et al., 2001). Another potential explanation for differences in stigmatization among the illnesses may have been variability in the respondents' perceptions of the specific illness under consideration. The current study did not provide specific illnesses in the vignettes but, instead, referred broadly to mental illness, STIs, and cancer. Participants were asked to identify the specific illness with which they believed the person in the vignette had been diagnosed and the STI and mental illness conditions yielded more variability in answers than did the cancer condition.

Whereas, in the cancer condition, 66% of participants listed cancer as the disease, without specifying a particular type of cancer, HIV/AIDS was the most reported in the STI condition with 47% of participants indicating that specific disease and depression was most reported in the mental illness condition with 31% of participants indicating that option. Thus, both the STI and mental illness condition resulted in more variability in the specific disorder that participants were mentally conceptualizing as they responded to the stigmatization scales. Importantly, depression appears to be stigmatized differently than other mental illness, such as schizophrenia or bipolar disorder (Norman, Windell, & Manchanda, 2010). Such variability in stigmatization among specific illnesses also appears to be true of STIs with stigmatization of HIV/AIDS differing from stigmatization of chlamydia (Cunningham et al., 2009). Cancer also shows variability in stigmatization rates with lung cancer specifically being more stigmatized, perhaps due to attributions of personal responsibility or blame for those diagnosed with an illness (Batson et al., 1997); and, it should be noted, lung cancer was provided as a specific cancer illness by only two participants in the current study. Thus, while cancer was stigmatized less overall than either STIs or mental illnesses, differences in stigmatization among the three types of illness may have been due, at least in part, to variability in the specific illness that each participant was conceptualizing while completing the measures.

### **Limitations of the Current Study**

One limitation of this study may have been the online format in which participants read both the empathy prime instructions and the vignette. When the empathy prime was previously used, the authors found that the empathy produced significantly higher empathy scores (Batson et al., 1997). That study was conducted in

person with each participant reading the empathy prime instructions and listening to a person reciting the vignette as if being interviewed. Further, participants in that study were told that the purpose of the study was, in part, to help determine what types of information could help shape future news stories. The current study presented written instructions for the empathy prime online and, then, the participants read the vignette rather than listening to it portrayed by an actor. The lack of these visceral sensory components may have reduced the effectiveness of the empathy prime in this study.

In addition, while the current study used three scales to measure stigmatization that all correlated with one another, the PSOSH and Modified Attitude Questionnaire assessed attitudes toward the individual in the vignette whereas the DD used scenario-based questions that encouraged the participant to see themselves engaging with a person diagnosed with the presented illness. Importantly, scenario-based questions may be a more robust way of examining potential actions of a participant rather than attitudes, and future studies might consider including items that ask about engaging in specific stigmatizing behaviors in order to evaluate if the DD is a more sensitive instrument than the PSOSH and Modified Attitude Questionnaire. It should also be noted that asking about or observing specific behaviors would help overcome limitations of relying exclusively on self-report measures such as memory errors and social desirability biases.

### **Implications and Future Research**

The current study aligns with previous research that empathy, even self-measured and self-reported, may decrease stigma toward populations diagnosed with illness. When training future clinicians, it is important to teach them about the ways in which stigma impacts an individual from the moment of diagnosis and throughout treatment. By



educating clinicians, they can, in turn, teach the patient what they will experience using fact-based education on their disorder and stories about recovery or management. Even addressing the stigma may help the patient. When someone receives a diagnosis, whether of mental illness or an STI, patients will likely fear the social consequences of disclosing their diagnosis or openly discussing their experience with the illness. By educating medical professionals about the stigma that a diagnosis has, as well as how that stigma is felt, medical professionals may be able to reduce that stigma and possibly reduce a delay in treatment. It isn't just the medical professional that needs this education but the individual diagnosed as well. By educating patients, they may be able to reduce their own internalized stigma, and continue to seek treatment or disclose, if necessary.

Future research on this topic would benefit from expanding the range of illness conditions. Type of illness did impact level of stigma and, given the variability of responses, should be examined further to see if there are differences within illness subcategory. Rather than studying broad categories of illness, it may be beneficial to examine type of illness within a condition, using examples such as chlamydia, HIV, and herpes, rather than STI. This could be expanded to mental illness as well, by using depression, schizophrenia and bipolar disorders as examples. Level of familiarity could also be assessed further, as familiarity has many components. Future research could include questions about knowledge of prognosis, treatment, or other information surrounding the diagnosis or treatment of illness.

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## Appendix A

### Demographics

*Please tell us a little about yourself. Your answers are completely anonymous and in no way linked to you.*

1. Select your year in school:
  - a. First Year
  - b. Second Year
  - c. Third Year
  - d. Fourth Year
  - e. Fifth Year and Above
  - f. Graduate Student
  
2. Select your age from the dropdown.
  - a. 18
  - b. 19
  - c. 20
  - d. 21
  - e. 22
  - f. 23
  - g. 24
  
3. What gender do you identify as:
  - a. Male
  - b. Female
  - c. Transgender
  - d. Rather not say
  
4. Select your ethnicity:
  - a. Asian/Pacific Islander
  - b. Black
  - c. Caucasian/White
  - d. Latino
  - e. Multiracial
  - f. Native American
  - g. Other: \_\_\_\_\_
  - h. Rather not say
  
5. How familiar are you with the illness described in this study?
  - a. Not at all familiar
  - b. A little familiar
  - c. Quite a bit familiar
  - d. Very familiar

6. How much empathy did you feel for the author of the reading?
  - a. I felt no empathy
  - b. I felt a little empathy
  - c. I felt quite a bit of empathy
  - d. I felt a lot of empathy

## Appendix B

### Modified Attitude Questionnaire - Mental Illness Condition

*The following sentences are an assessment of attitudes. Please read each of the following questions and select your response, where 1=Strongly Disagree and 9=Strongly Agree. Please be thoughtful and honest in your answers. Your responses are in no way connected to you.*

1. For most people with a mental illness, it is their own that that they have a mental illness. (R)	Strongly Disagree 1	2	3	4	5	6	7	8	Strongly Agree 9
2. Most people with a mental illness could have avoiding it. (R)	Strongly Disagree 1	2	3	4	5	6	7	8	Strongly Agree 9
3. How much do you personally care about the plight of people with mental illness?	Not at all 1	2	3	4	5	6	7	8	Very Much 9
4. Our society does not do enough to help people with mental illness.	Strongly Disagree 1	2	3	4	5	6	7	8	Strongly Agree 9
5. Compared with other social problems we face today (e.g., crime, education, drugs, homelessness, environmental protection, energy conservation), how would you rate the importance of helping people with mental illness?	Not at all important 1	2	3	4	5	6	7	8	Extremel y Important 9
6. Our society should do more to protect the welfare of people with mental illness.	Strongly Disagree 1	2	3	4	5	6	7	8	Strongly Agree 9
7. In general, what are your feelings towards people with mental illness?	Extremel y Negative 1	2	3	4	5	6	7	8	Extremel y Positive 9

*Note.* R denotes reverse scoring.

## Appendix C

### Modified Attitude Questionnaire - STI Condition

*The following sentences are an assessment of attitudes. Please read each of the following questions and select your response, where 1=Strongly Disagree and 9=Strongly Agree. Please be thoughtful and honest in your answers. Your responses are in no way connected to you.*

- |  |                              |                                      |  |                             |
|--|------------------------------|--------------------------------------|--|-----------------------------|
| 1. For most people with a sexually transmitted infection, it is their own that that they have a sexually transmitted infection. (R)  | Strongly<br>Disagree         | 1    2    3    4    5    6    7    8 |  | Strongly<br>Agree<br>9      |
| 2. Most people with a sexually transmitted infection could have avoiding it. (R)   | Strongly<br>Disagree         | 1    2    3    4    5    6    7    8 |  | Strongly<br>Agree<br>9      |
| 3. How much do you personally care about the plight of people with sexually transmitted infections?  | Not at all<br>1              | 2    3    4    5    6    7    8      |  | Very<br>Much<br>9           |
| 4. Our society does not do enough to help people with sexually transmitted infections.   | Strongly<br>Disagree         | 1    2    3    4    5    6    7    8 |  | Strongly<br>Agree<br>9      |
| 5. Compared with other social problems we face today (e.g., crime, education, drugs, homelessness, environmental protection, energy conservation), how would you rate the importance of helping people with sexually transmitted infections? | Not at all<br>important<br>1 | 2    3    4    5    6    7    8      |  | Extremely<br>Important<br>9 |
| 6. Our society should do more to protect the welfare of people with sexually transmitted infections.   | Strongly<br>Disagree         | 1    2    3    4    5    6    7    8 |  | Strongly<br>Agree<br>9      |
| 7. In general, what are your feelings towards people with sexually transmitted infections?   | Extremely<br>Negative<br>1   | 2    3    4    5    6    7    8      |  | Extremely<br>Positive<br>9  |

*Note.* R denotes reverse scoring.

## Appendix D

### Modified Attitude Questionnaire - Cancer Condition

*The following sentences are an assessment of attitudes. Please read each of the following questions and select your response, where 1=Strongly Disagree and 9=Strongly Agree. Please be thoughtful and honest in your answers. Your responses are in no way connected to you.*

- |   |                              |   |   |   |   |   |   |   |  |  |                             |
|---|------------------------------|---|---|---|---|---|---|---|--|--|-----------------------------|
| 1. For most people with a cancer, it is their own that that they have a mental illness. (R)   | Strongly<br>Disagree         |   |   |   |   |   |   |   |  |  | Strongly<br>Agree           |
|   | 1                            | 2 | 3 | 4 | 5 | 6 | 7 | 8 |  |  | 9                           |
| 2. Most people with a cancer could have avoiding it. (R)  | Strongly<br>Disagree         |   |   |   |   |   |   |   |  |  | Strongly<br>Agree           |
|   | 1                            | 2 | 3 | 4 | 5 | 6 | 7 | 8 |  |  | 9                           |
| 3. How much do you personally care about the plight of people with cancer?  | Not at all<br>1              |   |   |   |   |   |   |   |  |  | Very<br>Much<br>9           |
|   |                              | 2 | 3 | 4 | 5 | 6 | 7 | 8 |  |  |                             |
| 4. Our society does not do enough to help people with cancer.   | Strongly<br>Disagree         |   |   |   |   |   |   |   |  |  | Strongly<br>Agree           |
|   | 1                            | 2 | 3 | 4 | 5 | 6 | 7 | 8 |  |  | 9                           |
| 5. Compared with other social problems we face today (e.g., crime, education, drugs, homelessness, environmental protection, energy conservation), how would you rate the importance of helping people with cancer? | Not at all<br>important<br>1 |   |   |   |   |   |   |   |  |  | Extremely<br>Important<br>9 |
|   |                              | 2 | 3 | 4 | 5 | 6 | 7 | 8 |  |  |                             |
| 6. Our society should do more to protect the welfare of people with cancer.   | Strongly<br>Disagree         |   |   |   |   |   |   |   |  |  | Strongly<br>Agree           |
|   | 1                            | 2 | 3 | 4 | 5 | 6 | 7 | 8 |  |  | 9                           |
| 7. In general, what are your feelings towards people with cancer?   | Extremely<br>Negative<br>1   |   |   |   |   |   |   |   |  |  | Extremely<br>Positive<br>9  |
|   |                              | 2 | 3 | 4 | 5 | 6 | 7 | 8 |  |  |                             |

## Appendix E

### Devaluation-Discrimination Scale – Mental Illness Condition

*Please answer the questions below based on how you would respond when interacting with people with mental illness in various situations.*

	1	2	3	4	5
	Not at all	A little	Some	A lot	A great deal
1. I would willingly accept someone with a mental illness as a close friend.	1	2	3	4	5
2. I would believe that a person who has been treated for mental illness is just as intelligent as the average person.	1	2	3	4	5
3. I believe that someone with mental illness is just as trustworthy as the average citizen.	1	2	3	4	5
4. I would accept a person with mental illness as a teacher of young children in a public school.	1	2	3	4	5
5. I believe that entering treatment for mental illness is a sign of personal failure. (R)	1	2	3	4	5
6. I would not hire a person with mental illness to take care of my children, even if they had been well for some time. (R)	1	2	3	4	5
7. I think less of a person who has been in the hospital for a mental illness. (R)	1	2	3	4	5
8. If I were an employer, I would hire someone who had a mental illness if s/he is qualified for the job.	1	2	3	4	5
9. If I were an employer, I would pass over the application of a person who previously diagnosed with a mental illness in favor of another applicant. (R)	1	2	3	4	5
10. I would treat someone with mental illness just as I would treat anyone.	1	2	3	4	5
11. I would be reluctant to date a person who has been hospitalized for a serious mental illness. (R)	1	2	3	4	5
12. If I knew a person who was being treated for mental illness, most people would take his or her opinions less seriously. (R)	1	2	3	4	5

*Note.* R denotes reverse scoring.



## Appendix F

### Devaluation-Discrimination Scale – STI Condition

*Please answer the questions below based on how you would respond when interacting with a sexually transmitted infection in various situations.*

	1 Not at all	2 A little	3 Some	4 A lot	5 A great deal
1. I would willingly accept someone with a sexually transmitted infection as a close friend.	1	2	3	4	5
2. I would believe that a person who has been treated for a sexually transmitted infection is just as intelligent as the average person.	1	2	3	4	5
3. I believe that someone with a sexually transmitted infection is just as trustworthy as the average citizen.	1	2	3	4	5
4. I would accept a person with a sexually transmitted infection as a teacher of young children in a public school.	1	2	3	4	5
5. I believe that entering treatment for a sexually transmitted infection is a sign of personal failure. (R)	1	2	3	4	5
6. I would not hire a person with a sexually transmitted infection to take care of my children, even if they had been well for some time. (R)	1	2	3	4	5
7. I think less of a person who has been in the hospital for a sexually transmitted infection. (R)	1	2	3	4	5
8. If I were an employer, I would hire someone who had a sexually transmitted infection if s/he is qualified for the job.	1	2	3	4	5
9. If I were an employer, I would pass over the application of a person who previously diagnosed with a sexually transmitted infection in favor of another applicant. (R)	1	2	3	4	5
10. I would treat someone with a sexually transmitted infection just as I would treat anyone.	1	2	3	4	5
11. I would be reluctant to date a person who has been hospitalized for a serious sexually transmitted infection. (R)	1	2	3	4	5
12. If I knew a person who was being treated for a sexually transmitted infection, most people	1	2	3	4	5

would take his or her opinions less seriously.

(R)

*Note.* R denotes reverse scoring.

## Appendix G

### Devaluation-Discrimination Scale – Cancer Condition

*Please answer the questions below based on how you would respond when interacting with someone with cancer in various situations.*

	1	2	3	4	5
	Not at all	A little	Some	A lot	A great deal
1. I would willingly accept someone with cancer as a close friend.	1	2	3	4	5
2. I would believe that a person who has been treated for cancer is just as intelligent as the average person.	1	2	3	4	5
3. I believe that someone with cancer is just as trustworthy as the average citizen.	1	2	3	4	5
4. I would accept a person with cancer as a teacher of young children in a public school.	1	2	3	4	5
5. I believe that entering treatment for cancer is a sign of personal failure. (R)	1	2	3	4	5
6. I would not hire a person with cancer to take of my children, even if they had been well for some time. (R)	1	2	3	4	5
7. I think less of a person who has been in the hospital for a cancer. (R)	1	2	3	4	5
8. If I were an employer, I would hire someone who had a cancer if s/he is qualified for the job.	1	2	3	4	5
9. If I were an employer, I would pass over the application of a person who previously diagnosed with cancer in favor of another applicant. (R)	1	2	3	4	5
10. I would treat someone with cancer just as I would treat anyone.	1	2	3	4	5
11. I would be reluctant to date a person who has been hospitalized for a serious form of cancer. (R)	1	2	3	4	5
12. If I knew a person who was being treated for cancer, most people would take his or her opinions less seriously. (R)	1	2	3	4	5

*Note.* R denotes reverse scoring.

## Appendix H

### Perceptions of Stigmatization by Others for Seeking Help - Mental Illness Condition

*Imagine you knew someone (friend, family member) who sought treatment for mental illness. If they sought health services, to what degree would you \_\_\_\_\_. Please read each statement and circle the response corresponding to the number that indicates how much that statement would apply to you.*

	Not at all	A little	Some	A lot	A great deal
1. React negatively to them.	1	2	3	4	5
2. Think bad things of them.	1	2	3	4	5
3. See them as seriously disturbed.	1	2	3	4	5
4. Think of them in a less favorable way.	1	2	3	4	5
5. Think they posed a risk to others.	1	2	3	4	5

### Perceptions of Stigmatization by Others for Seeking Help - STI Condition

*Imagine you knew someone (friend, family member) who sought treatment for a sexually transmitted infection. If they sought health services, to what degree would you \_\_\_\_\_. Please read each statement and circle the response corresponding to the number that indicates how much that statement would apply to you.*

	Not at all	A little	Some	A lot	A great deal
1. React negatively to them.	1	2	3	4	5
2. Think bad things of them.	1	2	3	4	5
3. See them as seriously disturbed.	1	2	3	4	5
4. Think of them in a less favorable way.	1	2	3	4	5
5. Think they posed a risk to others.	1	2	3	4	5

### Perceptions of Stigmatization by Others for Seeking Help- Cancer Condition

*Imagine you knew someone (friend, family member) who sought treatment for cancer. If they sought health services, to what degree would you \_\_\_\_\_. Please read each statement and circle the response corresponding to the number that indicates how much that statement would apply to you.*

	Not at all	A little	Some	A lot	A great deal
1. React negatively to them.	1	2	3	4	5
2. Think bad things of them.	1	2	3	4	5
3. See them as seriously disturbed.	1	2	3	4	5

4. Think of them in a less favorable way.	1	2	3	4	5
5. Think they posed a risk to others.	1	2	3	4	5