Physical Health Outcomes of the Stigmatizer

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PHYSICAL HEALTH OUTCOMES OF THE STIGMATIZER

by

WILLIAM BUTLER

A thesis submitted in partial fulfillment of the requirements
for the Honors in the Major Program in Psychology
in the College of Sciences
and in the Burnett Honors College
at the University of Central Florida
Orlando, Florida

Fall Term 2014

Thesis Chair: Mustapha Mouloua, Ph.D.
ABSTRACT

This thesis explores physical health outcomes of individuals that hold stigma against those with mental illness. The stigmatizer is mentioned in the literature as an individual that holds a stigma towards another group. In this thesis, stigma refers to those that hold prejudice and may express discrimination towards a targeted group. Two studies were conducted that looked at multiple demographic variables as well as symptomology and degree of stigma towards those with mental illness. The first study looked at overall stigma without the stereotypical psychosomatic symptoms (chest pain and abdominal pain). The second study looked at a second dimension of stigma (social distance) and included the psychosomatic symptoms.

In the first study, results indicated that stigmatizers were more likely to be male \( (M = 1.53, SD = .51; r = .216, p < .01) \) and have higher socioeconomic status \( (M = 3.06, SD = .91; r = .22, p < .01) \). Health outcomes were not correlated in the first study.

In the second study, results indicated that those with higher levels of stigma \( (M = 45.13, SD = 13.52) \) also had more symptoms (including chest pain and abdominal pain; \( M = 4.92, SD = 5.64; R^2 = .06, F(1,98) = 6.58, p = .01 \)). This trend was also true for stigma as determined by social distance \( (M = 18.31, SD = 7.02) \) and health \( (R^2 = .10, F(1, 98) = 10.74, p < .01) \).

These results were consistent with the proposed hypothesis and the current literature of the stigmatizer as well as the biopsychosocial model of mental health.

Keywords: stigmatizer, health, stigma, mental illness, biopsychosocial.
DEDICATION

To my family, friends, and mentors:

Mom, Nana, and Gene for raising me and for Grover Cleveland.

Zoë, Lexie, Adelaide, Julia, and Jack for the mindbender and doing the retro.

Dr. Mouloua, Dr. Vehec, and Professor Wright for shaping me as a scholar and a person.

Thank you.
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Introduction

This study aims to investigate the physical health outcomes of individuals that hold stigma against those with mental illness. The 2003 President’s New Freedom Commission on Mental Health described stigma as a cluster of negative attitudes and beliefs that motivate the public to fear, reject, or discriminate against people with mental illness (Carter Center, 2003). The research on mental health stigma has gained relative traction within the past ten years as initiatives were set by the U.S. Surgeon General and the National Institute of Mental Health. Specifically, appeals were made to address the barriers to mental health stigma in response to mass shootings. A meta-analysis of these works has found that, despite the variability in degree of studies, stigma does negatively impact the mental health of others (Mak, Poon, Pun, & Cheung, 2007).

Stigma is often described as a complex construct with multiple dimensions. Corrigan (2004) states that stigma involves cues, stereotypes, prejudice, and discrimination that can manifest as public and self-stigma. He defines public stigma as the stigma directed towards an individual while self-stigma is the process of an individual holding stigmatic attitudes towards the self. He goes on to explain that cues such as psychiatric symptoms, physical appearance, and labels may suggest that a person has a mental illness. Likewise, these cues can activate stereotypes from the stigmatizers (for example, that individuals with mental illness are violent). Finally, prejudice are the cognitive and emotional beliefs towards those with perceived mental illness and discrimination is the behavioral expression of this prejudice.

The stigmatizer is mentioned in the literature as an individual that holds a sigma towards another group. In this discussion, it refers to those that hold prejudice and may express
discrimination towards those groups. This stigma has been found to impact those with mental illness to a significant degree and there has been a federal appeal for programs to reduce stigma (Mak et al., 2007).

Within the past ten years, there has also been an upheave of research on the physical health outcomes that stigma can place on individuals. This line of research is especially true in the population of AIDS patients which routinely face stigma within modern society. This research has also led to an appeal for more advocacies or programs for these patients. This is especially important in regards to health behaviors such as condom use, HIV test-seeking behavior, care-seeking behavior upon diagnosis, quality of care, and perception and treatment of HIV infected persons.

It has been found that although these efforts do seem to work, stigma persistent and more work is yet to be done with AIDS and other illnesses (Brown, Macintyre, Trujillo, 2003). Recent reviews show that a lack of rigor on program effectiveness is a persistent problem when assessing these initiatives and that more research is needed in understanding these relationships (Sengupta, Banks, Jonas, Miles, Smith, 2011).

As mentioned, there has been an appeal for legislation to reduce mental health stigma. Cummings, Lucas, and Druss (2013) discuss three landmark laws that address discrimination among those with mental illness. These regulations have been viewed as symbolic and important victories for civil rights advocates as they address multiple domains of life including education, healthcare, and employment reform. These acts include the Mental Health Parity and Addiction Equity Act of 2008. This act required group health plans to offer mental health or substance use disorder insurance coverage to match those financial benefits off medical or surgical benefits in
annual and lifetime dollar limits. The *Education for All Handicapped Children Act of 1975* was a piece of legislation which addressed discrimination against those with disabilities in the school setting. Specifically, it provides protections for students with mental health-related disabilities. This act also provided federal funds for school programs to students that were excluded from the public school system due to mental illness. The *Americans with Disabilities Act of 1990* addressed workplace discrimination against those with disabilities and also provided protection for those with psychiatric disabilities just as the *Education for All Handicapped Children Act* did in the school-based setting. Although these acts have been described in detail by various commissions of what constitutes mental illness and areas of impairment, protection is not uniform for all subgroups (Cummings et al., 2013).

Despite this trend in research and policy, little is known about the effects that stigma has on the stigmatizer. Preliminary studies on the topic indicate that there is a significant positive correlation between having stigma and mental distress (Masuda, Price, Anderson, Schmertz, Calamaras, 2009). It is theorized that stigma results from a lack of psychological flexibility (the ability to process events without judgment) and that this lack of flexibility is detrimental to interpersonal relationships. The logic follows that lack of social support may contribute to the psychological distress experienced by the stigmatizer. Masuda et al. (2009) contend that interpersonal relationships are especially strong buffers for stressors. This has important health implications. Decades of research provide evidence that such a connection exists although the mechanism is not well understood. This merits the current study as stress is associated with a slew of physical illnesses. These include, but are not limited to, headaches, high blood pressure, heart problems, asthma, arthritis, depression, and anxiety (Taylor, 2011). Physical health and wellness outcomes of those with stigma is then especially worth investigating. The current study
aims to tie these variables together. If there is a correlation between physical health and holding mental health stigma, then this would give support to the complex interplay within the biopsychosocial paradigm.

There is a general consensus within the mental health community that stigma remains a persistent problem. In *Mental Health: A Report of the Surgeon General* (1999), the National Institute of Mental Health wrote that: “Powerful and pervasive, stigma prevents people from acknowledging their own mental health problems, much less disclosing them to others.” The Office of the Surgeon General goes on to list the impairment that mental health stigma contributes to which includes blocking access to employment, generating feelings of isolation and disconnection, and often outright discrimination and abuse. Mental health stigma is later framed as “yet another challenge of coping with server and persistent mental illness and of working toward recovery” (1992). In the United States, these initiatives are often delegated to nonprofit organizations that work within communities to decrease mental health stigma. Chiefly, the research speaks volumes to better understand the role mental health stigma impacts the stimatizer, mentally ill, and treatment outcomes (Corrigan, 2007). Specifically, Corrigan (2007) argues that stigma research needs to examine signaling events related to psychiatric stigma including the label of mental illness. He goes on to advocate that research needs to investigate how the public perceives information on self-care. Finally, he makes the point that researchers need to investigate the reactions of stigma. The present study aims to build from this research by using evidence based measurements that fit within the theoretical framework of stigma. This includes the discrimination stimuli, cognitive mediator, and behavior.

Prior mental health stigma studies were developed for medical professionals. The first scale to assess attitudes toward mental illness was the Custodial Mental Illness Ideology Scale
(Gilbert & Levinson, 1956). Similar to other early measurements on the topic, this scale lacked theoretical frameworks (Day, Edgre, & Eshleman, 2007). As Corrigan (2007) has mentioned, there are substantial theoretical considerations in regards to mental health stigma. In the recent literature, stigma is often measured with various self-report scales. A problem with these various measures is a lack of consistency between operational definitions. Typical limitations of these data collection tools are also worth noting including forgetfulness and self-serving bias. This has made hallmarks of other areas complicated in regards to stigma such as meta-analysis (Bruce, Lawrence, Phelan, & Collins, 2004).

This investigation will use similar methods with several controls to reduce the limitations. Specifically, it will measure the degree of stigma an individual has towards those with mental illness and their physical health. Wellness was originally viewed medically as a person’s mind and body being free from illness, injury, or pain. In 1946, the World Health Organization expanded this definition to include mental and social well-being as (WHO, 2006). This concept has been expanded by healthcare providers to apply to the ways in which people live their life. That is, promoting healthy lifestyles and those that avoid unhealthy activities.

Wellness is an encompassing term which can include lifestyle, mental, physical, spiritual, and social dimensions. Lifestyle includes financial, leisure, and home activities. Mental can include philosophy, learning aptitude, and knowledge. Physical typically includes health, fitness, and appearance. Spiritual can include life purpose, innate gifts/talents, and spirituality/faith. Finally, social include relationships, community, and environment (Valenty, 2014). These dimensions are useful in understanding the various parts of being an adaptive person but to become resilient in this model does not include a perfect balance. Rather, it is more realistic to view these dimensions as static with various domains compensating to meet unique challenges.
(Valenty, 2014). For this reason, several other variables will also be considered including social economic status, ideology, and spirituality among others.

Mausda et. al (2009) contended that research on the stigmatizer is underwhelming. They go on to discuss the various theories on the potential adaptiveness of being stigmatic. Essentially, it has been argued that being stigmatic can protect an individual from potentially dangerous others. They counter this argument with research that addresses the modern maladaptiveness of stigma and its outcomes on interpersonal relationships. That is, they argue that being judgmental and not open to new experiences can be isolating and stressful for the individual. Their study then lends support to the theory that the stigmatizer is indeed distressed.

This line of research has powerful implications. For one, if the stigmatizer is under psychological stress, it would be the ethical duty for psychologists to develop interventions and techniques to reduce this stigma. The American Psychological Association (2014) declares that “Psychologists strive to benefit those with whom they work and take care to do no harm.” This simple oath includes practicing evidence based and advocating for populations that may be underserved. Another implication is that by understanding and providing intervention for these factors, stigma can be reduced. Masuda et. al (2009) claim that psychological flexibility is a singular concept that may compliment what Coorigan (2006) describes as multidimensional. Indeed, their preliminary research provides empirical data to the opposing theory of stigma as an adaptive process. In 2007, Masuda et al. showed that acceptance and commitment therapy (ACT) can do just that for individuals with inflexible attitudes. This is relevant because it shows that adverse effects of the stigmatizer can be treated. Indeed, if the stigmatizer could be better understood, more refined treatment methods could be employed that appeal not only to their misinformation but in regards to their physical health, something they may care more about.
Kashdan & Rottenberg (2010) presented reasons for why topics such as psychological flexibility for the stigmatizer may not be well represented in the overall psychological framework. Among this, they discuss that the research may be fragmented due to different labels and operational definitions including ego-resiliency, executive control, response modulation, and self-regulation. They go on to describe the complications with defining psychological flexibility as it is often considered a combination of other concepts. In their analysis, they describe the various ways psychological flexibility has been defined and the outcomes of major studies in the field. Overall, they found psychological flexibility to be consistent with positive mental health. This lends support to include psychological flexibility within the positive psychology movement and as an important aspect of stigma and interpersonal relationship counseling.

Including psychological flexibility and stigma in the positive psychology movement has many benefits. First, it can help garner support (both academically and fiscally) to embark on more complex studies and true experiments. In time, this would hopefully shed light on a more precise mechanism for stigma and the degree that factors moderate its effects. Furthermore, it may add a humanizing element to what is often described as a dehumanizing mental assessment (Masuda et al., 2009). As researchers begin to view stigmatizers more sympathetically and appreciate that stigma is a learned behavior, more effective treatments can be explored.

For the present study, several instruments were employed. Day’s Mental Illness Stigma scale was employed (Day et al., 2007). Because mental health stigma is a multifaceted, this scale builds on prior theoretical work on the topic. As mentioned previously, this is particularly helpful given the typical lack of theoretical backing in self-report scales on stigma. Specifically, Day applied the six dimensions of stigma proposed by Jones et al. (1984) in Social Stigma: The Psychology of Marked Relationships. These dimensions include anxiety, relationship disruption,
hygiene, visibility, treatability, professional efficacy, and recovery. The Quality of Well-Being Scale (QWB-SA, V1.04) was adapted to measure physical wellness. Strengths of this scale include assessment in multiple areas of functioning and controls for recall bias by only inquiring within the past three days. Compared to other health measurements, the QWB has been independently found to be valid and their advantages have been supported (Kaplan, Atkins, & Timms, 1984). These controls accurately address the limitations mentioned previously for self-report data.

This data will compare response from both Day’s Mental Illness Stigma scale and the QWB-SA will be analyzed. A higher report in Day’s Mental Illness Stigma scale will correlate with a more affirmative responses on the QWB-SA to support the hypothesis that stigma produces negative health outcomes. The questionnaire will also assess demographic information of the participants. This information will be assessed using the Demographic Questions form created by Stanford University Department of Psychology (2014). This information will be useful when predicting the generalization of the results. The results will be interpreted using a coefficient of correlation between the variables (demographics, degree of stigma towards others, and health).

In a separate study, the Social Distance Scale (SDS) was used as a secondary measure of stigma. The scale views stigma in terms of closeness that an individual would be comfortable with a targeted group. For example, one battery asked the volunteers to rate how much they agreed with the statement “I would marry a person with mental illness” (Appendix).

It should be noted that the chosen apparatus and scales provide limitations for the generalization of the results. For example, although Day’s Mental Illness Stigma scale may be
suitable for the stated purposes, it is not the only scale for assessing the degree of stigma an individual has. Likewise, the QWB-SA is not the only scale for measuring health outcomes. Other scales that were considered include the Stigmatizing Scale (SAB-BN) (McLean, Paxton, Massey, Hay, Mond, & Rodgers, 2014) and the Patient Health Questionnaire (PHQ) (Spitzer, Williams, Koreonke, 1999). Although these and other scales would be suitable, they were discarded for various reasons. For the SAB-BN, this includes the lack of specificity to mental health stigma. For the PHQ, this includes the larger degree of subjectivity by recalling symptoms for up to two weeks. The PHQ also did not explicitly include holistic health outcomes and instead focuses on physical illness and symptoms.
Methods

Participants

A sample of 300 students and community volunteers participated in this study (116 men, 183 women, and 1 transman). All participants were recruited through an online university program. The age range of participants were from 17 and 61 years of age ($M = 22$ years). All volunteers were treated according to the American Psychological Association guidelines as well as university institutional review.

Materials

This study employed self-report data which collected demographic information, relative level of stigma towards others, and physical health outcomes. The specifics of each measure are highlighted below. A copy of each scale can be located the Appendix.

Day’s Mental Illness Scale (MIS)

MIS (Day, 2007) includes 15 items related to determining levels of stigmatic views in individuals. Particularly useful was the scale’s ability to measure stigma specifically for mental illness. The scale presents a statement and instructs the volunteer to rate the accuracy of the statement to themselves on a scale of 1-7. 1 is indicated to include responses that they “completely disagree” with and 7 includes responses that they “completely agree” with.
Social Distance Scale (SDS)

The Social Distance Scale (SDS) is a measure of social avoidance. The participants responded with the same convention as the MIS for internal consistency. According to Penn D., Guynan K., & Daily, T., the average of this inventory is then taken and the scale has a consistency between .75 and .93 (as cited in Graves., R., Cassisi. J., Penn, D., 2005, p. 319). As expected, the results of the SDS correlated with MIS which is described in detail below.

Quality of Well-Being Scale (QWB-SA)

QWB-SA (Kaplan, Atkins, & Timms, 1984) is a scale which measures the overall health of an individual. This instrument includes yes (Y) or no (N) responses and 12 were employed to address the physical health of the individual. The rationale being that more yes responses denotes more symptoms which is the definition of being ill. Each response is relative to the previous 3 days. This controls for memory loss as individuals may not accurately recall illnesses for longer periods of time. For the purposes of this research, 3 or more symptoms denotes poor health outcomes.

Demographic Questions

Demographic Questions (Stanford University, 2014) is a series of demographic questions obtained from Stanford University Department of Psychology. They include standard questions including gender, religion, and socioeconomic information of participants. The complete demographic questionnaire can be found in the appendix section.
Procedure

The current research was conducted through an online system in two separate studies. Participants would log-in through the system (SONA) and were presented with the informed consent form. This form explained the anonymous nature of their results, the purpose of collecting their information, and their right to withdraw from the study. For the first study, participants were presented with the MIS and the QWB-SA. After this, the participants were debriefed and their results were collected. The data was processed through SPSS for analysis using a coding system to protect participant confidentiality.

For the second study, an updated survey was added to the online system. This updated version included the SDS inventory and several items on the QWB-SA were made more explicit (“chest pain” in addition to the general “shortness of breath”). 100 students were used for this version of the inventories.

The hypothesis for this investigation is that there will be a positive correlation regression between degree of stigma towards others and physical health outcomes. That is, individuals with more stigma towards others will have higher health scores, indicating a lower quality of health. This study is preliminary in that it is limited by the nature of the scales used. Being a multiple regression, the mechanism of these anticipated results is still unknown. Although the literature suggests that being stigmatic negative affects interpersonal relationships (Kashdan & Rottenberg, 2010), an association with physical health is unknown. A third factor, such as socioeconomic status, may be driving any correlations could be the stress that is caused by not having a reliable support system. These considerations are merely speculation as further research is definitely warranted.
Results

All analyses were performed using SPSS Statistics version 22. The items on the all inventories were analyzed using Pearson coefficients and multiple regression.

Study I

A series of bivariate correlations were conducted on their responses. Results indicated that those with more stigma were more likely to be male ($M = 1.53, SD = .51; r = .216, p < .01$) and have higher socioeconomic status ($M = 3.06, SD = .91; r = .22, p < .01$). Overall health was not found to be correlated with mental health stigma in the first study. The results for these correlations can be found below.

### Descriptive Statistics

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stigma</td>
<td>48.6350</td>
<td>11.41857</td>
<td>200</td>
</tr>
<tr>
<td>Socioeconomic</td>
<td>3.0625</td>
<td>.90736</td>
<td>192</td>
</tr>
<tr>
<td>Major</td>
<td>1.6054</td>
<td>.63501</td>
<td>185</td>
</tr>
<tr>
<td>Ideology</td>
<td>3.5514</td>
<td>2.44033</td>
<td>185</td>
</tr>
<tr>
<td>Sex</td>
<td>1.5300</td>
<td>.51030</td>
<td>200</td>
</tr>
</tbody>
</table>

Table 1.1: Descriptive statistics of statistically significant variables for the first study.
### Correlations

<table>
<thead>
<tr>
<th></th>
<th>Stigma</th>
<th>Socioeconomic</th>
<th>Major</th>
<th>Ideology</th>
<th>Sex</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stigma</td>
<td>Pearson Correlation</td>
<td>1</td>
<td>.196**</td>
<td>.076</td>
<td>-.091</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.006</td>
<td>.301</td>
<td>.218</td>
<td>.001</td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>200</td>
<td>192</td>
<td>185</td>
<td>185</td>
</tr>
<tr>
<td>Socioeconomic</td>
<td>Pearson Correlation</td>
<td>.196**</td>
<td>1</td>
<td>.032</td>
<td>-.079</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.006</td>
<td>.670</td>
<td>.299</td>
<td>.946</td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>192</td>
<td>192</td>
<td>177</td>
<td>177</td>
</tr>
<tr>
<td>Major</td>
<td>Pearson Correlation</td>
<td>.076</td>
<td>.032</td>
<td>1</td>
<td>.320**</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.301</td>
<td>.670</td>
<td>.000</td>
<td>.021</td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>185</td>
<td>177</td>
<td>185</td>
<td>185</td>
</tr>
<tr>
<td>Ideology</td>
<td>Pearson Correlation</td>
<td>-.091</td>
<td>-.079</td>
<td>.320**</td>
<td>1</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.218</td>
<td>.299</td>
<td>.000</td>
<td>.051</td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>185</td>
<td>177</td>
<td>185</td>
<td>185</td>
</tr>
<tr>
<td>Sex</td>
<td>Pearson Correlation</td>
<td>-.230**</td>
<td>-.005</td>
<td>-.169*</td>
<td>.144</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td>.001</td>
<td>.946</td>
<td>.021</td>
<td>.051</td>
</tr>
<tr>
<td>N</td>
<td></td>
<td>200</td>
<td>192</td>
<td>185</td>
<td>185</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table 1.2: Correlations between statistically significant variables of the first study.

Multiple regression analysis was used to test if the tested variables significantly predicted participants’ degree of stigma. It was found that socioeconomic status predicted stigma as did sex ($R^2=.25, F(1,189)=9.20, p<.01$). The models can be viewed in Table 1.3.
### Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Change Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>R Square</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Change F Change df1 df2 Sig. F</td>
</tr>
<tr>
<td>1</td>
<td>.225&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.051</td>
<td>.046</td>
<td>11.15168</td>
<td>.051</td>
</tr>
<tr>
<td>2</td>
<td>.298&lt;sup&gt;b&lt;/sup&gt;</td>
<td>.089</td>
<td>.079</td>
<td>10.95542</td>
<td>.038</td>
</tr>
</tbody>
</table>

- **a. Predictors:** (Constant), Sex
- **b. Predictors:** (Constant), Sex, Socioeconomic

Table 1.3: Model summary of multiple regression between statistically significant variables with stigma.

### Coefficients

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>Correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
</tr>
<tr>
<td>1</td>
<td>(Constant)</td>
<td>48.657</td>
<td>3.680</td>
</tr>
<tr>
<td></td>
<td>Socioeconomic</td>
<td>2.451</td>
<td>.874</td>
</tr>
<tr>
<td></td>
<td>Sex</td>
<td>-5.018</td>
<td>1.553</td>
</tr>
</tbody>
</table>

- **a. Dependent Variable:** Stigma

Table 1.4: Coefficients and t-test of stigma.

**Study II**

Results indicated that those with higher levels of stigma ($M=45.13$, $SD=13.52$) also had more symptoms (including chest pain and abdominal pain; $M=4.92$, $SD=5.64$; $R^2=.06$, $F(1,98)=6.58$, $p=.01$). This trend was also true for stigma as determined by social distance ($M=18.31$, $SD=7.02$) and health ($R^2=.10$, $F(1,98)=10.74$, $p<.01$). It should also be noted that stigma and social distance were correlated ($r=.51$, $p<.001$). Health and sex ($M=1.8$, $SD=.45$, $r=-.64$).
.27, p<.01) were also found to be correlated. The results for these correlations can be found in below.

### Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>4.9200</td>
<td>5.63660</td>
<td>100</td>
</tr>
<tr>
<td>Sex</td>
<td>1.7600</td>
<td>.45216</td>
<td>100</td>
</tr>
<tr>
<td>Stigma</td>
<td>45.1300</td>
<td>13.52189</td>
<td>100</td>
</tr>
<tr>
<td>Social Distance</td>
<td>18.3100</td>
<td>7.02764</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 2.1: Descriptive statistics for variables of statistical interest.

### Correlations

<table>
<thead>
<tr>
<th></th>
<th>Health</th>
<th>Sex</th>
<th>Stigma</th>
<th>Social Distance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td>Pearson Correlation</td>
<td>1</td>
<td>-.269**</td>
<td>.251*</td>
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<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.007</td>
<td>.012</td>
<td>.001</td>
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<td>100</td>
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<tr>
<td>Sex</td>
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<td></td>
<td>Sig. (2-tailed)</td>
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<td>.327</td>
<td>.190</td>
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<td>N</td>
<td>100</td>
<td>100</td>
<td>100</td>
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<tr>
<td>Stigma</td>
<td>Pearson Correlation</td>
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<td>-.099</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.012</td>
<td>.327</td>
<td>.000</td>
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<tr>
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<td>N</td>
<td>100</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Social Distance</td>
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<td>-.132</td>
<td>.507**</td>
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<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.001</td>
<td>.190</td>
<td>.000</td>
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<tr>
<td></td>
<td>N</td>
<td>100</td>
<td>100</td>
<td>100</td>
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</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Table 2.2: Correlations between the variables of statistical interest.
Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Change Statistics</th>
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<td>df1</td>
<td>df2</td>
<td>Sig. F</td>
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<td>.053</td>
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</table>

a. Predictors: (Constant), Health

Table 2.3: Model summary of stigma and health.

Model Summary

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<tr>
<th>Model</th>
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<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Change Statistics</th>
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</thead>
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<td></td>
<td></td>
<td>R Square Change</td>
<td>F</td>
<td>df1</td>
<td>df2</td>
<td>Sig. F</td>
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a. Predictors: (Constant), Health

Table 2.4: Model summary of social distance and health.

Coefficients

<table>
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<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
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<th>Sig.</th>
<th>Correlations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>B</td>
<td>Std. Error</td>
<td>Beta</td>
<td></td>
<td>Zero-order</td>
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<tr>
<td>1</td>
<td>(Constant)</td>
<td>42.169</td>
<td>1.750</td>
<td>24.095</td>
<td>.000</td>
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<tr>
<td>Health</td>
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<td>.235</td>
<td>.251</td>
<td>2.566</td>
<td>.012</td>
</tr>
</tbody>
</table>

a. Dependent Variable: Stigma

Table 2.5: Coefficients and t-tests of stigma and health.
<table>
<thead>
<tr>
<th>Model</th>
<th>B</th>
<th>Std. Error</th>
<th>Beta</th>
<th>t</th>
<th>Sig.</th>
<th>Zero-order</th>
<th>Partial</th>
<th>Part</th>
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<tr>
<td>1</td>
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<td>.314</td>
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</tbody>
</table>

a. Dependent Variable: Social Distance

Table 2.6: Coefficients and t-tests of social distance and health.
Discussion

The goal of this thesis was to better understand the health outcomes of the stigmatizer among multiple variables. At present, these findings support the research as described by Masuda et al. (2009) and Corrigan (2007). The findings also fit into the theoretical biopsychosocial model as symptomology appeared to impact the health of those with higher degrees of stigma.

Masuda et al. (2009) aimed to understand stigma through a model of psychological flexibility. They found that the stigmatizer has lower levels of psychological flexibility which could impair personal relationships. Because personal relationships are important buffers for psychological distress (Taylor, 2011), it was hypothesized here that stigma may also express itself through physiological symptoms. In the first study, health did not appear to influence health although socioeconomic status and sex did. It should be noted that the classic psychosomatic symptoms were not included in this study. In the second study, chest pain and abdominal pain were added as was another dimension of stigma (social distance). When analyzed, it was found that the number of symptoms and stigma were correlated on both dimensions. It should also be noted that sex was found to be correlated with stigma, as was reflected in the first study.

Although several variables were investigated, it would be of interest to include psychological flexibility in future studies. In line with the biopsychosocial model, psychological flexibility does seem to be beneficial for both physical and mental health (Kashdan & Rottenberg, 2010). It is likely that psychological flexibility (which could include positive emotions, thoughts, and the ability to adapt to various situational demands) is a moderating
cofactor that influences both health and being stigmatic. The implications of this study are that mental health experts should begin to focus on the stigmatizer. Regardless of which variables are associated, there does seem to be some connection between mental and physical states. This could provide another avenue to aim advocacy programs to reduce stigma. It is possible that those that do not have stigma may experience mental distress through physical manifestations, including chest pain and abdominal pain. Rather than focusing efforts by communities to support the mentally ill, efforts should also be made to appeal to the stigmatizer. That is, they may not believe in mental illness as much but may care about their physical health.

There are several limitations of this study that should be noted. First, due to participant unavailability, there were unequal numbers of volunteers to do the second study. This could explain the difference in correlations between socioeconomic status and stigma in the second study. Second, the self-report nature of the study may have compromised accurate reporting of symptoms as is expected from these batteries. Finally, the study was conducted at a major public research institution and the generalization of the results are questionable. The results may be skewed as college students are typically younger and might be more open-minded than the rest of the population.

These limitations warrant further study. Although these variables have been laid out as particularly useful when understanding the stigmatizer, their exact mechanism remains unknown. The current research suggests that chest and abdominal pain are particularly susceptible to psychosomatic manifestations due to the fight-or-flight nature of stress hormones (Taylor, 2011) but exactly how stigma may elicit these responses remains less understood.
Appendix
Appendix: Inventories

Listed below are questions for this section of the survey. Please provide a response for every question. If you are given the option to decline to answer a question, then declining to answer is considered a response.

1. Please enter your year of birth.
2. Please provide your gender.
3. Please provide your ethnic and racial background.
4. Where were you born (city/region, country)
5. Are you a US citizen?
6. In terms of education and income, would you say your parents are:
7. Your political party preference:
8. Do you have siblings?
9. Also, if so, what is your birth order?
10. Do you consider yourself to be a religious person, if so, what religion do you affiliate with?
11. Handedness:
12. Vision:
13. What is your major?
14. Which of the following best describes your political orientation (please circle one)?
15. Which class/level most closely describes you
16. What is your UCF NID number? (This information is kept confidential)
(Please rate each question from 1 to 7 where 1 is "completely disagree", 4 is "neutral", and 7 is "completely agree").

17. There are effective medications for mental illnesses that allow people to return to normal and productive lives. [R]

18. I don’t think that it is possible to have a normal relationship with someone with a mental illness.

19. I would find it difficult to trust someone with a mental illness.

20. People with mental illnesses tend to neglect their appearance.

21. It would be difficult to have a close meaningful relationship with someone with a mental illness.

22. I feel anxious and uncomfortable when I’m around someone with a mental illness.

23. It is easy for me to recognize the symptoms of mental illnesses.

24. There are no effective treatments for mental illness.

25. I probably wouldn’t know that someone has a mental illness unless I was told. [R]

26. A close relationship with someone with a mental illness would be like living on an emotional roller coaster.

27. There is little that can be done to control the symptoms of mental illness.

28. I think that a personal relationship with someone with a mental illness would be too demanding.

29. Once someone develops a mental illness, he or she will never be able to fully recover from it.

30. People with mental illnesses ignore their hygiene, such as bathing and using deodorant.
31. Mental illnesses prevent people from having normal relationships with others.

If you have had the listed symptoms within the past 3 days, please indicate "Yes". If you have not had the symptom in the past 3 days, please select “No”.

32. In the past 3 days, have you had: Any problems with your vision ont corrected with glasses or contact lenses (such as double vision, distorted vision, distorted vision, flashes, or floaters)?

33. In the past 3 days, have you had: Any eye pain irritation, discharge, or excessive sensitivity to light?

34. In the past 3 days, have you had: A headache?

35. In the past 3 days, have you had: Dizziness, earache, or ringing in your ears?

36. In the past 3 days, have you had: Difficulty hearing, or discharge, or bleeding from an ear?

37. In the past 3 days, have you had: Stuffy or runny nose, or bleeding from the nose

38. In the past 3 days, have you had: A tooth ache or jaw pain?

39. In the past 3 days, have you had: Sore or bleeding lips, tongue, or gums?

40. In the past 3 days, have you had: Cough of wheezing?

41. In the past 3 days, have you had: Shortness of breath or difficulty breathing? Y/N

42. In the past 3 days, have you had: Abdominal pain?*

43. In the past 3 days, have you had: Chest pain?*
(Please rate each question from 1 to 7 where 1 is "completely disagree", 4 is "neutral", and 7 is "completely agree").

44. I would have people with mental illness as regular friends.*
45. I would comfortably work beside someone with mental illness in an office.*
46. I would have be comfortable with families in my neighborhood having mental illness.*
47. I would prefer people with mental illness only as speaking acquaintances.[R]*
48. I would prefer people with mental illness live outside my neighborhood.[R]*
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