

THE GOLDEN SECTION AND ATTITUDES TOWARDS MENTAL ILLNESS: HOW
DOES STIGMA INFLUENCE GOLDEN SECTION RATINGS?

A THESIS

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ABSTRACT

Studies have shown that when people are asked to make judgments about others using a list of bipolar adjective pairs, they consistently produce ratings that are approximately 62% positive and 38% negative. The precise proportion of 61.8:38.2, known as the golden section, stems from Pythagorean principles that explain how people organize and make sense of the world around them. The current study examined how a stigmatized view of the mentally ill can affect golden section ratings of various diagnostic labels. One hundred and eighteen participants were tested on: (1) their view of the mentally ill (level of stigma), (2) how much contact they have had with the mentally ill, and (3) their golden section ratings of various medical and psychiatric labels. Results indicated that participants with a less stigmatizing view of the mentally ill did not exhibit a golden section pattern in rating all diagnostic labels, despite what was hypothesized. Participants with a stigmatizing view of the mentally ill did not exhibit a reverse golden section pattern in rating psychiatric labels as expected either. The results of the current study did show, however, that people who have more contact with the mentally ill also have a less stigmatizing view of the mentally ill.

INTRODUCTION

Stigmatization is a social problem that is likely to capture the interest of psychologists, sociologists, and lay people alike. Individuals who are stigmatized due to mental illness frequently encounter difficulty obtaining or maintaining work, finding suitable living space, and receiving other benefits that non-stigmatized individuals could usually obtain with relative ease (Page 1995; Wahl, 1999). How one perceives others is heavily influenced by the norms of a particular society (Scheff, 1999). If the individuals being judged exhibit behavior that deviates *too far* from the norm of society, an “us versus them” delineation is formed and the stigmatized label begins to take hold (Link & Phelan, 2006).

Researchers examining the topic of mental illness stigma often explore (1) the factors that facilitate its development, (2) the factors that inhibit its development, and (3) the factors that mediate or moderate its development. However, it may also be useful to explore how stigmatized attitudes influences the way people typically organize information about others. If stigma has the power to alter what would otherwise be a default system for understanding the world, it would provide further support for the idea that stigma is a pervasive social phenomenon that warrants more attention from professionals in the field.

This paper begins with a review of the literature examining the development of stigmatization. How people come to foster a stigmatized view of others and the kind of societal structure that facilitates its development are considered. Scheff’s (1999) theory of social control and how it plays a role in the cultivation of stigma is also explored.

Next, mental illness stigma is examined more closely. This section includes how stigma affects the mentally ill and the factors that help reduce the prevalence of mental illness stigma. While a quick glance at the research on contact with the mentally ill and stigmatized attitudes towards the mentally ill suggest conflicting findings, a closer examination reveals that the results are not conflicting, but are, instead, specific to varying circumstances. Studies show that while the *type* of contact and the length of time spent with the mentally ill can effectively reduce mental illness stigma (Alexander & Link, 2003; Phelan & Link, 2004), the right kind of educational experience can serve a similar purpose (Costin & Kerr, 1962; Mino, Yasuda, Tsuda, & Shimodera, 2001; Tanaka, Ogawa, Inadomi, Kikuchi, & Ohta, 2003).

Finally, the golden section is introduced in the last section of the literature review. The golden section, a proportion of 61.8:38.2, is thought to represent the most harmonious balance between objects or events (Benjafield & Adams-Webber, 1976). That which adheres to the golden section proportion is said to contain the most aesthetically appealing properties (Badesha & Horley, 2000) in that it allows the figure to be optimally striking against the background (Benjafield & Adams-Webber, 1976). Studies reveal that the golden section holds across a multitude of different circumstances and diverse participant populations (Adams-Webber, 1978; Benjafield & Adams-Webber, 1976; Benjafield & Green, 1978; Rigdon & Epting, 1982; Romany & Adams-Webber, 1981).

The golden section is relevant to the current research study for two main reasons. First, while the golden section pattern has been elicited by a variety of different participants in judging a number of different objects, people, and events, one recent

research study revealed that a reverse golden section pattern was elicited when participants were asked to judge “mental patient” and “homeless person”, two stigmatized identities (Raskin, Harasym, Mercuri, & Widrick, 2008). Second, it seems interesting to test the durability of the golden section against the influence of stigma. Would a golden section pattern be elicited despite stigma’s negative influence? Would a reverse golden section pattern surface instead, as it did in Raskin et al.’s (2008) study? These are questions that are central to the current investigation.

The Construction of Stigma

According to Link and Phelan (2006), stigma is created by a process in which: (1) people determine which individual differences are important to acknowledge through a process of social selection; (2) the individual who is labeled is connected to unfavorable characteristics that produce a negative stereotype; (3) people distance themselves from stigmatized individuals by creating an “us” versus “them” delineation; (4) stigmatized individuals lose their status and are discriminated against; and (5) there is an exercise of power by those who actively stigmatize and label others.

In order to facilitate a better understanding of the origins of stigma, it is important to examine what a given social system considers the norm and, conversely, how that social system defines deviance. Thomas J. Scheff (1999) provided a thorough explanation of how stigma is constructed through social control. Scheff (1999) began his argument by asserting that social control creates conformity among members of society. People are rewarded for conforming to societal expectations that are agreed upon by the majority members of a particular society, whether these expectations are explicitly or implicitly stated. At the same time, people are punished when they do not conform to

societal expectations. Scheff (1999) went on to explain deviance as non-conformity from a social scientific perspective. Those employing Scheff's (1999) perspective often talk about deviance and non-conformity in terms of social control, a perspective that places great emphasis on the situation. According to Scheff (1999), lay people and professionals working with *deviants* prefer to discuss deviance and non-conformity in terms of the individual's role. However, comprehensive and sound analysis should take both the individual and the situation into consideration.

Conformity, non-conformity, and social control can be discussed in terms of one's attire, language, mannerisms, or the like (Scheff, 1999). The present study explored these constructs in relation to mental illness. According to Scheff (1999), there are three typical responses to non-conformity or deviance: stigma, labeling, and segregating oneself from the non-conforming individual. Although all of these reactions are inter-related, stigma is arguably the least understood and, consequently, warrants the most attention. Stigma often surfaces as a consequence of an excessively strong emotional reaction to a deviant, someone whose behavior is deemed to be a violation of the norm or, in some cases, even amoral. This judgment is then attached to people in such a way that it becomes part of their identity, resulting in stigmatization. Scheff (1999) argued that it is people's superfluous emotional reaction to a *deviant* that creates stigma.

Mental Illness Stigma

People with mental illnesses are subject to both anticipated and real discrimination as a result of their stigmatized status (Alexander & Link, 2003). The stigma that is placed on individuals with mental illnesses makes it difficult for them to get and maintain employment, obtain housing, receive insurance coverage, and flourish in

social settings overall (Page, 1995; Wahl, 1999). Fortunately, researchers have found that contact with the mentally ill has a healthy influence on stigmatizing attitudes in that it tends to lessen the attitudes that contribute to stigma by challenging long-standing preexisting beliefs (Alexander & Link, 2003).

Certain psychiatric labels have been shown to result in greater stigmatization than others (Eker, 1989; Phelan, Link, Stueve, & Pescosolido, 2000). Some researchers speculate that people are less likely to stigmatize those with mild forms of mental illness than those who are severely mentally ill because of the degree to which they can relate to the individual (Phelan et al., 2000). For example, Eker (1989) asked participants to read four vignettes, three of which described individuals with (1) paranoid schizophrenia, (2) anxiety neurosis/depression, and (3) simple schizophrenia. The fourth vignette described a *normal* individual. After reading each vignette, participants had to answer 12 questions pertaining to the individuals they read about. Results of the study indicated that the “mental illness” label was most readily attached to the paranoid schizophrenic individual. Participants also desired the greatest social distance from the individual portrayed in the paranoid schizophrenic vignette and expected him to be the biggest burden to those who knew him. The individual who was portrayed as the “normal” character was at the other end of the continuum and the other characters described in the vignettes fell somewhere in the middle (between “normal” and paranoid schizophrenic).

An extensive body of literature has examined the factors that influence people’s attitudes towards the mentally ill (Alexander & Link, 2003; Costin & Kerr, 1962; Eker, 1989; Mino et al., 2001; Phelan et al., 2000; Tanaka et al., 2003; Wallach, 2004). Social

scientists have been interested in investigating these factors since the 1950's (Phelan et al., 2000). This investigation has become progressively more important with the movement towards de-institutionalization and a more community-based approach to mental illness (Erdner, Magnusson, & Nyström, 2005; Taylor & Dear, 1981; Trute, Tefft, & Segall, 1989).

Contact and Stigma

Contact with the mentally ill has been shown to be the most effective combative element against mental illness stigma (Alexander & Link, 2003; Phelan & Link, 2004). However, research in this area has produced conflicting findings. The complexity of this issue has led researchers to become increasingly interested in examining the impact of various types of contact on stigmatized attitudes towards the mentally ill. Researchers speculate that it is the failure to observe the specifics about the contact that has created conflicting data (Alexander & Link, 2003; Phelan & Link, 2004; Trute, et al., 1989; Wallach, 2004). It is argued that the following factors need to be considered: the nature of the contact (impersonal to personal) (Phelan & Link, 2004; Trute et al., 1989), the voluntariness of the contact (Wallach, 2004), the length of exposure (Wallach, 2004), the perceived dangerousness of the patient (Trute et al., 1989), and the type of educational experience one has had (Mino et al., 2001; Tanaka et al., 2003).

It is important to note that the relationship between contact and stigmatized attitudes is not necessarily a linear one and, as noted, it is highly dependent upon the nature of the contact (Trute et al., 1989; Wallach, 2004). Wallach (2004) tested how different kinds of exposure affect people's perception of the mentally ill. In this investigation, Wallach examined five distinct attitudes among participants, some of

which had been adapted from Taylor and Dear (1981). These included: (1) *authoritarianism*, a view of the mentally ill as inferior beings who require the stern instruction and control of professionals, (2) *benevolence*, an attitude of a moralistic obligation to treat mental patients with kindness and assist them in making improvements in their lives, (3) *mental hygiene ideology*, the view of mental patients as individuals in need of treatment and capable of change, much in the same way as patients who seek treatment for physical illnesses, (4) *social restrictiveness*, the attitude that mental patients should be kept separate from or restricted in some way from the general public for the safety of society at large, and (5) *interpersonal etiology*, the belief that mental illness results from less than optimal parental care or upbringing and develops out of necessity, to serve as a coping mechanism.

The results of Wallach's study indicated that participants who had the most exposure to the mentally ill (by working with them or making visits), had the largest increase in interpersonal etiology. Additionally, attitudes of social restrictiveness decreased the most for those who worked with mental patients. Social restrictiveness was not affected by visits or learning material in a classroom. Partial exposure to the mentally ill (by studying course material or making one visit) had a negative impact on participant's attitudes towards them. In fact, partial exposure proved to be more harmful than no exposure at all.

Researchers have found that people are likely to perceive the mentally ill as less dangerous when the contact they have with them is more personal (Phelan & Link, 2004; Trute et al., 1989), voluntary, and made over a prolonged period of time (Wallach, 2004). Alternately, those who experience brief periods of impersonal (Trute et al., 1989) and

non-voluntary contact (Wallach, 2004) with the mentally ill are more likely to perceive them as dangerous (Phelan & Link, 2004). People who perceive the mentally ill as dangerous are arguably more likely to have a stigmatizing view of them than those who do not. Confirming whether or not such a relationship between perceived dangerousness and stigma does exist may be fundamental to finding an effective combat against mental illness stigma.

Educational Experience and Stigma

In addition to voluntariness, personal closeness, length of exposure, level of education, and concentrated educational experiences have also been shown to be predictive of mental illness stigma (Costin & Kerr, 1962; Mino et al., 2001; Tanaka et al., 2003). Mino and his colleagues (2001) evaluated a new one-hour educational program aimed at challenging people's attitudes towards mental illness. Researchers exposed 95 first-year medical students to the program and compared their attitudes towards the mentally ill to those of 94 first-year medical students who did not receive the program. Compared to the control group, those who received the program (1) were more willing to establish close relationships with former mental patients, (2) showed greater respect for the human rights and independence of the mentally ill, (3) were more sympathetic about the causes and characteristics of mental illness, and (4) were in more support of the role and function of mental health facilities.

Similar to the Mino et al. (2001) study, Tanaka and his colleagues (2003) compared participants' attitudes towards mental illness before and after an hour and a half long lecture on mental health, given by either a medical doctor or a public health nurse. Researchers evaluated participants based on the following: (1) the Mental Illness

and Disorder Understanding Scale (MIDUS), (2) Scale of Negative Attitudes Towards the Independence of People with Mental Disorders, (3) treatment-seeking behavior, and (4) social background (e.g. gender, age, volunteer experience, educational experience, previous exposure with the mentally ill, etc.). Participants completed all of the scales before and after the lecture and scores were subsequently statistically compared and analyzed. The results paralleled those of the Mino et al. (2001) study. The mental health lecture had increased participants' understanding about mental illness, decreased their negative attitudes, and redefined their view on treatment-seeking behavior. The only group of participants that did not experience a decrease in negative attitudes was the group that entered the study with the lowest level of negative attitudes.

Invaluable information is gained by learning that people's attitudes towards mental illness can be positively affected by proper educational experience. However, an investigation of mental illness stigma would be made more complete by not only including an examination of *how* people organize their attitudes but also how these attitudes can affect a default way of organizing information. Although there are, arguably, an infinite number of ways people organize and categorize information, the current study utilizes an 'algebraic processor' view of mental organization known as the golden section hypothesis.

The Golden Section

The golden section is a ratio that defines the relationship between values A and B when $A/B = B/A+B$ (Adams-Webber, 1978). This ratio represents the idyllic proportion of a presentation in terms of its aesthetic properties (Badesha & Horley, 2000) and can be traced back to Pythagorean principles (Benjafield & Adams-Webber, 1976). The

proportion of 61.8:38.2 is thought to represent the most harmonious balance between objects or events such that this proportion allows a figure to be the most striking against a background (Benjafield & Adams-Webber, 1976). The golden section, essentially, is thought of as a default way of organizing information. According to the golden section hypothesis, people should organize information in a proportion statistically similar to 61.8:38.2, regardless of the information they are asked to categorize. Therefore, if people hold to this ratio in all instances *except* when judging labels associated with stigma, it so creates a phenomenon worth further investigation.

Previous studies indicate that when people are asked to make judgments about others along bipolar dimensions, they consistently rate others on the negative pole approximately 38% of the time and on the positive pole approximately 62% of the time (Benjafield & Adams-Webber, 1976; Benjafield & Green, 1978; Kahgee, Pomeroy, & Miller, 1982; Lee & Adams-Webber, 1987). Although several studies have found that participants consistently adhere to this pattern when rating others over a variety of situations and in judging many different aspects of the human experience (Adams-Webber, 1978; Benjafield & Adams-Webber, 1976; Benjafield & Green, 1978; Rigdon & Epting, 1982; Romany & Adams-Webber, 1981), a reverse golden section pattern surfaced when people were asked to make judgments about stigmatized individuals (Raskin, Harasym, Mercuri, & Widrick, 2008). This is a compelling finding given the pervasiveness of the golden section pattern in past research.

Much of the research that has been conducted on the golden section hypothesis has contributed to findings that speak to the pervasiveness of the golden section pattern across a variety of different situations. Kahgee, Pomeroy, and Miller (1982) conducted

one such study in which they examined whether or not the golden section would persist among schizophrenic inpatients. This population of individuals was of particular interest to researchers because people with schizophrenia are often thought to have a deficit in their ability to make interpersonal judgments about others (Pishkin, 1966), the very ability thought to be measured by the golden section. Sixteen thought-disordered (TD) and 16 non-thought-disordered (NTD) schizophrenic patients participated in Kahgee et al.'s (1982) study. Participants were instructed to complete a task utilizing a modified version of Kelly's repertory grid (Kelly, 1991) to judge themselves, 12 elicited acquaintances, and objects along the dimensions of activity (active vs. passive), potency (strong vs. weak) and evaluation (pleasant vs. unpleasant). Kelly's repertory grid technique is used to tap into people's personal meaning-making system. The bipolar constructs used in the repertory grid serve as representations of how people organize their judgments of objects, events, and people. While one construct represents the foreground (the characteristic that sticks out in one's mind), the other construct represents the background (the characteristic that serves as its' polar opposite). No significant differences were found between groups, that is, golden section ratings were elicited by both female and male, TD and NTD patients, and for judgments about people and objects. This compelling finding suggests that people with schizophrenia make judgments about others in the same fashion as people who do not have a diagnosed mental illness.

The results of Kahgee et al.'s (1982) study sparked the interest of Badesha and Horley (2000), particularly because other researchers had found results that conflict with the results of Kahgee's study (Space & Cromwell, 1980; Button, 1990). Badesha and

Horley (2000) set out to test if psychological problems affect one's self-construal system. For their study, they recruited 42 individuals, formally diagnosed with a mental illness, who were currently being treated by a mental health professional. A large majority of the participants were diagnosed with either schizophrenia or depression, but some participants were diagnosed with bipolar disorder or personality disorder. Participants were asked to complete a repertory test using a card-sort method in which they had to indicate how two people were similar to one another and different from a third person. Every individual that participants had to judge possessed role titles (i.e., successful person, mother, former friend, authority figure, etc.); "self" was included in each trial as well. Results indicated that, in general, participants rated themselves and others according to the golden section proportion despite having a mental illness. However, while male participants diagnosed with depression rated themselves on a positive pole for over three-quarters of the trials, female participants diagnosed with schizophrenia only rated themselves on a positive pole for less than one-half of the trials.

The results of Badesha and Horley's (2000) study have interesting implications. It seems to suggest that people's algebraic processor is not readily affected by depression, a mood disorder, but can be affected by schizophrenia, a thought disorder. Such a result provides partial support for Kahgee et al's. (1982) study, suggesting that mental illness does not affect golden section ratings, it is inherently counter-intuitive. How could people with depression regard themselves just as highly as people who do not suffer from depression? Is how people *feel* about their judgments about others more relevant to golden section research than how people *think* about their judgments?

It is important to not only acknowledge the pervasiveness of the golden section pattern, but to also recognize the conditions in which the golden section is not elicited. Researchers have found that golden section ratings tend to be developmentally dependent, that is, ratings begin to approximate the golden section with age, maturity, and social experience (Applebee, 1975; Barratt, 1977). The findings from Romany and Adams-Webber's (1981) study provide further support for this observation. In their study, 126 children (60 from Trinidad and 66 from Canada) were administered a repertory grid in which they were asked to make judgments about 11 acquaintances based on 12 bipolar dimensions. Ratings assigned by ten-year-old children were compared to those assigned by children in mid-adolescence. Based on previous research, Romany and Adams-Webber hypothesized that the ten-year-old children would assign acquaintances to the positive pole significantly more than the mid-adolescents would. The results indicated that the younger children did in fact judge others on a positive pole to a degree significantly above the positive ratings for the golden section of 62%, whereas the mid-adolescents tended to approximate the golden section proportion more consistently. Additionally, there were no significant differences between cultures.

If golden section ratings are developmentally dependent, it seems reasonable to suspect that there are other factors that can influence golden section ratings. One research study showed that there are in fact some instances that fail to elicit a golden section pattern and instead, elicit a *reverse* golden section pattern (Raskin et al., 2008). Raskin, Harasym, Mercuri, and Widrick (2008) conducted a study to explore the instances in which such a pattern might be found. In their study, Raskin et al. (2008) asked participants to make judgments about individuals with 9 different role identities

(i.e., business person, politician, lawyer, mental patient, homeless person, etc.) using 12 bipolar adjective pairs (i.e., generous-stingy, pleasant-unpleasant, strong-weak, etc.). All participants were college students recruited from undergraduate psychology classes. Raskin et al. (2008) hypothesized that (1) a golden section pattern would be found for individuals with non-stigmatized identities, (2) a *reverse* golden section pattern would be found for ratings of stigmatized identities, namely “mental patient” and “homeless person,” (3) “criminal” would not elicit either a golden section or a reverse golden section rating, and (4) “self” would be rated more positively than the golden section predicts. Three of the four hypotheses were supported. Surprisingly, no significance was established for the first hypothesis. However, it was the significance found for the second hypothesis that was of particular interest to the researchers. Participants rated the “mental patient” and “homeless person” identities in a pattern consistent with the reverse golden section, as hypothesized. Although people typically judge others on a positive pole 62% of the time (Benjafield & Adams-Webber, 1976; Benjafield & Green, 1978; Kahgee et al., 1982; Lee & Adams-Webber, 1987), in this study, stigmatized individuals were judged on the positive pole only 38% of the time. This finding has strong implications for the power behind certain stigmatized labels and has inspired the current study, which involves a closer examination of how mental illness stigma affects golden section ratings of people with stigmatized labels.

CURRENT STUDY

The aim of the current study was to assess how participants’ perceptions of the mentally ill affect their golden section ratings of various diagnostic labels. In addition to exploring how stigma plays a role in golden section research, the relationship between mental

illness stigma and contact with the mentally ill was examined. The first hypothesis of the study was that participants with a non-stigmatizing view of the mentally ill would exhibit a golden section pattern in rating *all* diagnostic labels, including those associated with mental illness. Whereas the results of Raskin et al.'s (2008) study indicated that stigmatized labels were judged in a reverse golden section pattern across all participants, the second hypothesis of the current study diverges a bit from this finding. Instead of simply looking at all participant ratings for stigmatized labels, as was done in the Raskin et al. study (2008), information regarding how stigmatizing participants' attitudes were towards the mentally ill was collected and assessed. Research shows that how stigmatizing one's attitudes are both affect and are affected by a whole host of other factors (Costin & Kerr, 1962; Mino et al., 2001; Phelan & Link, 2004; Tanaka et al., 2003; Taylor & Dear, 1981; Trute et al., 1989; Wallach, 2004). Given this, it seemed logical to predict that the degree to which participants stigmatized others might also affect golden section ratings. In this view, it is more likely that those with highly stigmatizing attitudes would judge psychiatric labels in a reverse golden section than those with a less stigmatizing view. Therefore, the second hypothesis of the study was that participants with a stigmatized view of the mentally ill would exhibit a reverse golden section pattern in rating diagnostic labels associated with mental illness.

Previous research suggests that people with psychotic disorders are subjected to greater stigma than those with non-psychotic disorders (Eker, 1989; Phelan, Link, Stueve, & Pescosolido, 2000). Researchers believe that this finding is due, at least in part, to the fact that people are more apt to stigmatize those who are the least like themselves (Phelan et al., 2000). Additionally, overt symptoms of schizophrenia are less socially accepted

than those of non-psychotic disorders, such as depression (Eker, 1989). Therefore, the third hypothesis of the study was that the *schizophrenia* label would elicit a reverse golden section rating, regardless of participants' view of the mentally ill.

Although research examining stigma and its' relationship to contact with the mentally ill is complex and, without extensive examination, seems to produce conflicting findings, the overarching theme that has surfaced from stigma research is that contact with the mentally ill has combative properties that decrease mental illness stigma (Alexander & Link, 2003; Phelan & Link, 2004). Therefore, the fourth and final hypothesis of the study was that participants who have more contact with the mentally ill would have a less stigmatizing view of the mentally ill.

METHOD

Participants

A total of 203 students participated in the study. Unfortunately, the data for 85 participants had to be excluded from the study because large portions of their data were left incomplete. Of the remaining 118 participants, 98 were female and 20 were male. Participants' ages ranged from 18 to 55, with a mean age of 22.91 ($SD=6.536$). The majority of the sample was composed of Caucasian participants (104), with the remainder of the sample identifying as Latino(a)/Hispanic (4), Black/African American (3), Multiracial (3), Asian/Pacific Islander (2). Two participants did not indicate their ethnic background.

Golden Section Survey

The first measurement tool for this study was a survey modeled on one used by Lee and Adams-Webber (1987). Participants were asked to make judgments about

people with various psychiatric and medical diagnoses using 12 different bipolar adjective pairs (generous-stingy, pleasant-unpleasant, true-false, fair-unfair, active-passive, energetic-lethargic, sharp-dull, excitable-calm, strong-weak, bold-timid, hard-soft, and rugged-delicate). These adjective pairs are the very same ones that Lee and Adams-Webber (1987) used in their golden section studies. Using the provided bipolar adjective pairs, participants had to rate individuals with the following diagnoses: Bipolar Disorder, Heart Disease, Obsessive Compulsive Disorder, High Blood Pressure, Lyme Disease, Schizophrenia, and Diabetes.

Golden Section Survey: Administration and Scoring

Participants were asked to choose the number “1” from a drop-down menu box if they believed that the first word in the adjective pair described the diagnostic label best or the number “2” if they believed that the second word in the adjective pair was a better descriptor. For example, imagine a participant was presented with the adjectives (1) “timid” and (2) “bold” and was asked to rate an individual with obsessive-compulsive disorder (OCD). If the participant believed that people with OCD were more timid than bold, he/she would select a ‘1’. On the other hand, if the participant believed that people with OCD were more bold than timid, he/she would select a ‘2’.

In scoring the results, each time participants chose the positive adjective to represent the diagnostic label, they received one point. These points were summed across each diagnostic label. Therefore, the lowest possible score for any one diagnostic label was ‘0’ (no positive adjective ratings) and the highest possible score was ‘12’ (all positive adjective ratings). A percentage for each diagnostic label was calculated by dividing the total number of positive ratings (for that diagnostic label) by 12. These

scores were compared to the positive ratings golden section mean of 0.618 and the positive ratings reverse golden section mean of 0.382.

As an attempt to counter-balance and reduce the likelihood of participants being influenced by order effects, the order of presentation of the adjectives in each adjective pair was varied so that the adjective on the positive pole of the golden section did not always appear before the adjective on the negative pole. The positive adjectives used in this study were ‘generous’, ‘pleasant’, ‘true’, ‘fair’, ‘active’, ‘energetic’, ‘sharp’, ‘excitable’, ‘strong’, ‘bold’, ‘hard’, and ‘rugged’. Therefore, the following adjective pairs were reverse scored: ‘generous/stingy’, ‘true/false’, ‘active/passive’, ‘sharp/dull’, ‘strong/weak’ and ‘hard/soft’.

Mental Illness Stigma Assessment

The second measurement scale used for the purpose of the study was the Mental Disorder Prejudice Scale (MDPS) (Tanaka, Inadomi, Kikuchi, & Ohta, 2004). This 22-item scale is used to assess how stigmatized participants’ attitudes are towards the mentally ill. Each item was rated on a 4-point Likert scale, with a score of ‘1’ indicating ‘strongly disagree’ and a score of ‘4’ indicating ‘strongly agree’. To keep the scores on the same scale as the original MDPS, scores of ‘1’ were transformed to ‘0’, ‘2’ to ‘1’, ‘3’ to ‘2’, and ‘4’ to ‘3’. Therefore, the range of scores for *each* item was ‘0’ to ‘3’. Possible *total* scores on this scale were 0 to 66, with a higher score indicating stronger prejudice against the mentally ill.

One disadvantage of the original MDPS is that it only contained two reverse scored items. Therefore, by applying minimal revisions to some of the existing items, several reverse scored items were created. Revisions only consisted of removing or

adding the word ‘not’ and changing the word ‘impossible’ to ‘possible’. The core content meaning of each item was not altered. The purpose of this was to ensure that items were not all presented in a negative (or positive) light, making it easy for participants to predict what was being examined. Items 1, 6, 9, 12, 15, 16, and 21 consisted of the reverse scored items (see Appendix C). Some of the items on the MDPS included statements such as ‘People with mental disorders could be reliable friends’ and ‘It is dangerous for a person with a mental disorder to live freely’. For an examination of all of the items on the MDPS, see Appendix C. Scores on the MDPS were compared to scores on the golden section survey as well as the contact questionnaire (the third and final scale that is described below).

Contact Assessment

The final measurement scale utilized was Link and Cullen’s (1986) contact questionnaire. This brief, 7-item scale is used as a general assessment of participants’ experience with or exposure to the mentally ill. Response choices for the contact questionnaire were “yes” or “no”. One point was awarded for every response of “yes”, while a score of 0 was given for every “no” response. Scores for the seven items were summed, with a higher score indicating more contact (possible scores ranging from 0 to 7). The contact questionnaire includes items such as ‘Have you ever known a person who was hospitalized for a mental illness?’ and ‘Have you ever worked for pay or done volunteer work with people who have been hospitalized for a mental illness?’. To view all of the items on this questionnaire, see Appendix D. Participants’ scores on the contact questionnaire were compared to their scores on the MDPS.

Procedure

This study was posted through an online survey site known as Survey Monkey. A campus-wide recruitment email was sent to all students attending the State University of New York at New Paltz. Psychology majors were awarded one experiential credit towards their major's requirement of research experience.

Once participants entered the study website, they were asked to read and consent to the parameters of the research study by choosing 'I accept' at the conclusion of the research consent form. Participants were given a brief description of what they could expect of the study, the possible risks involved, as well as the knowledge that they could exit the study website and discontinue participation at any time, without penalty.

First participants began by filling out a 4-item demographic questionnaire. Next, participants were led to the golden section grid. Upon completion of the golden section grid, participants were instructed to fill out the MDPS. The study concluded with the contact questionnaire. For ethical reasons, participants were allowed to leave items blank and move on to subsequent scales/questionnaires. Once participants completed the entire study, they were debriefed. Participants were informed of the full purpose of the study and were thanked for their participation.

RESULTS

Three one-sample t-tests were conducted to evaluate the first three hypotheses of the study. For these hypotheses, a non-significant result indicates a significant finding (means should not be significantly different from the test value). A Pearson correlation was used to test the fourth hypothesis.

MDPS Descriptives

Scores on the Mental Disorder Prejudice scale range from 0 to 66. However, participants' *actual* scores on the MDPS ranged from 8 to 39. The mean stigma score was 21.51 ($SD = 6.44$). The lowest stigma score for the **high stigmatizers** ($N = 47$) was 23 and the highest score was 39 ($M = 27.96$, $SD = 3.629$). The lowest stigma score for the **low stigmatizers** ($N = 47$) was 8 and the highest score was 19 ($M = 15.30$, $SD = 3.169$). These statistics indicate that even the participants with the most highly stigmatizing attitudes towards the mentally ill did not possess views that were exceptionally stigmatizing. In fact, these participants were not even close to achieving the highest possible stigma score of 66.

Hypothesis 1: Low stigmatization and the golden section

The golden section predicts a mean of 0.618 for positive ratings for categories assessed using bipolar adjectives. The first hypothesis of the study was that people with a less stigmatizing view of the mentally ill would exhibit a golden section pattern across *all* ratings, including those associated with mental illness. Participants in the 40th percentile of the MDPS (those whose scores fell in the bottom 40%) were labeled the “low stigmatizers” and were used to test this hypothesis. A one-sample t test was performed to evaluate whether the mean ratings for people with a less stigmatizing view of the mentally ill were significantly different from the positive ratings golden section mean of 0.618. Results indicated that the mean of 0.5256 ($SD = 0.1060$) was significantly different from the positive golden section mean, $t(46) = -5.975$, $p < 0.001$). Participants who had a less stigmatizing view of the mentally ill did not exhibit a golden section pattern in rating all diagnostic labels. Therefore, no support was established for this hypothesis.

Hypothesis 2: Stigma and the reverse golden section

The reverse golden section predicts a mean of 0.382 for positive ratings of identities rated on bipolar dimensions. The second hypothesis of the study was that people with a stigmatized view of the mentally ill would exhibit a reverse golden section pattern in rating diagnostic labels associated with mental illness. Participants in the 60th percentile of the MDPS (those whose scores fell in the top 40%) were labeled the “high stigmatizers” and were used to test this hypothesis. A one-sample *t* test was run to evaluate whether people with a stigmatized view of the mentally ill provided ratings that were significantly different from the positive ratings reverse golden section mean of 0.382. Results indicate that the mean of 0.5668 (*SD* = 0.1216) was significantly different from the positive golden section mean of .618, $t(46) = 10.42, p = 0.00$. Participants with a stigmatizing view of the mentally ill did not rate psychiatric diagnostic labels in a pattern consistent with the reverse golden section. Therefore, the second hypothesis of the study was not supported.

Hypothesis 3: Schizophrenia and the reverse golden section

The third hypothesis of the study was that participants would evaluate the schizophrenia label in a pattern consistent with the reverse golden section, regardless of their view of the mentally ill. A one-sample *t* test was used to test whether or not mean ratings for the schizophrenia label were significantly different from the positive ratings reverse golden section mean of 0.382. Results of the *t*-test indicate that the mean of 0.5699 (*SD* = 0.1556) was significantly different from the reverse golden section mean of 0.382, $t(118) = 13.118, p = 0.000$. Again, contrary to intuition, this result indicates a

non-significant finding. Participants did not rate the schizophrenia label in a manner consistent with the reverse golden section (independent of their view of the mentally ill).

Hypothesis 4: Contact with the mentally ill and stigma

A Pearson r correlation was used to test the fourth and final hypothesis. It was hypothesized that participants who have more contact with the mentally ill would be less likely to stigmatize the mentally ill. Contact scores were correlated with participants' score on the MDPS. The mean contact score for high stigmatizers was 27.96 ($SD = 3.63$) while the mean for low stigmatizers was 15.30 ($SD = 3.17$). Some participants had no contact with the mentally ill whereas others obtained the highest score possible on the contact scale, indicating that they had substantial contact with the mentally ill. The mean contact score across all participants was 3.26 ($SD = 2.061$). Results of the Pearson r correlation indicated that there is a significant inverse correlation between contact and stigma, $r = -0.278, p = 0.002$. The participants who had more contact with the mentally ill also had lower stigma scores.

Follow-up Analyses

In examining the means table (see Table 1) for each diagnostic label, it became evident that there was no clear pattern to the data. More explicitly, there was a mix of physical and psychiatric diagnostic labels that received positive ratings both above *and* below the mean of 0.50. These data did not fit with the hypotheses of the study in that participants judged physical ailments and psychiatric ailments similarly. In fact, the lowest ratings were among the medical illnesses. This is contrary to the expectation that psychiatric disorders would be rated more negatively.

All diagnostic labels that received a mean *below* 0.50 would be compared to the positive ratings reverse golden section mean of 0.382 to see if the collective mean for those labels was statistically similar to the reverse golden section. All diagnostic labels that received a mean *above* 0.50 would be compared to the positive ratings golden section mean of 0.618 to see if the collective mean for those labels was statistically similar to the golden section.

The collective mean for high blood pressure, obsessive-compulsive disorder, bipolar disorder, and schizophrenia ($M = 0.5869$, $SD = 0.1091$) was compared to the positive ratings golden section mean of 0.618 because the group mean was above 0.50. For this data, a result significantly different from the positive ratings golden section mean actually indicates a non-significant finding. As suspected, the mean for categories that received a rating above 0.50 was significantly different from the golden section mean, $t(117) = -3.100$, $p = 0.002$. In other words, diagnostic labels that received a mean above 0.50 did not adhere to a golden section pattern.

Next, the collective mean for lyme disease, heart disease, and diabetes ($M = 0.4303$, $SD = 0.1336$) was compared to the positive ratings reverse golden section mean of 0.382 because the group mean was below 0.50. The mean for categories below 0.50 was significantly different from the positive ratings reverse golden section mean, $t(117) = 3.928$, $p = 0.000$. Therefore, diagnostic labels that received a mean below 0.50 did not adhere to a reverse golden section pattern.

In examining the means tables for low stigmatizers, it was evident that these participants assigned higher ratings for psychiatric labels than the high stigmatizers. The mean of 0.592 appeared to be mathematically close to the positive ratings golden section

mean of 0.618. Therefore, these means were compared and tested for significance as a follow-up. The results of a one-sample t test indicated that the mean of 0.592 ($SD = 0.126$) was not significantly different from the mean of 0.618, $t(46) = -1.432, p = 0.159$. Although participants with a less stigmatizing view of the mentally ill did not rate all diagnostic labels in a golden section pattern (which was hypothesized), they *did* rate diagnostic labels associated with mental illness in a golden section pattern.

DISCUSSION

The golden section

The results of the study showed that participants with a less stigmatizing view of the mentally ill did not adhere to a golden section pattern in rating all diagnostic labels. This finding is not consistent with the majority of golden section research indicating that people consistently judge others in a positive to negative ratio of approximately 62:38 when using bipolar dimensions (Benjafield & Adams-Webber, 1976; Benjafield & Green, 1978; Kahgee et al. 1982; Lee & Adams-Webber, 1987). It seems counter-intuitive that medical conditions (lyme disease, heart disease, and diabetes) were all rated less positively than psychiatric disorders (obsessive-compulsive disorder, bipolar disorder, and schizophrenia). High blood pressure was the only medical condition with a mean above 0.50. This suggests that most people may not discriminate between mental and physical ailments. The only exception in this study was the post-hoc discovery that participants with a less stigmatizing view of the mentally ill rated psychiatric disorders according to the positive ratings of the golden section. Surprisingly, these participants rated medical conditions less positively than psychiatric disorders.

The reverse golden section

Participants with a stigmatizing view of the mentally ill were expected to elicit a reverse golden section pattern in rating diagnostic labels associated with mental illness. This hypothesis, however, was not supported. Benjafield and Green (1978) have found that when people are asked to judge atypical information, that which is usually perceived as foreground is perceived as background and what is perceived as background is perceived as foreground. Although this phenomenon seemed to affect participants in Raskin et al's (2008) study when they were asked to judge stigmatized labels (*homeless person* and *mental patient*), participants were not affected by the connotations that accompany specific psychiatric labels, despite the fact that the participants tested on this hypothesis had a stigmatizing view of the mentally ill. This may be because the *atypical* effects that a psychiatric label might normally have on people's judgments about others were affected by the fact that participants were presented with numerous psychiatric labels. It is unlikely that any one label was perceived as atypical when they were amongst several other labels that could also be perceived as atypical. This phenomenon, known as a contrast effect, is explained more thoroughly in the last section of the paper.

While suggesting that potential significant results were affected by the content and structure of the grid might be valid, it would be faulty to discount the possibility that the results could instead indicate that participants simply did not judge psychiatric labels more negatively than labels associated with physical ailments. The fact that this result was found across all participants, independent of how stigmatizing their view of the mentally ill was, suggests that stigma may not have had as strong of an influence on people's judgments about others as one might expect. Although the underlying meaning

of these results may remain speculation for now, proper investigation in a follow-up study could lead to explanations that could be experimentally validated.

Schizophrenia and the reverse golden section

Research shows that people with psychotic disorders, such as schizophrenia, are stigmatized to a greater degree than people with other mental illnesses (Eker, 1989; Phelan et al., 2000). Not surprisingly, people require greater social distance from those with psychotic disorders than from those with less severe forms of mental illness, such as anxiety or depression (Eker, 1989). This is presumably associated with how easily one can relate to someone else's condition (Phelan et al., 2000). In light of this research, the schizophrenic label seemed to be the most likely, of all the diagnostic labels, to elicit a reverse golden section pattern from participant ratings. However, the results of this study did not indicate such a finding. Participants' ratings of the schizophrenic diagnostic label were significantly different from the positive ratings reverse golden section mean of 0.382. The contrast effect seems to present itself again, as it did for the hypothesis regarding "high stigmatizers" rating psychiatric labels.

Contact and Stigma

Results indicate that participants had a less stigmatizing view of the mentally ill when they had more contact with them. This finding is consistent with previous research and has been replicated numerous times (Alexander & Link, 2003; Phelan & Link, 2004). Although the correlation between contact and stigma was not a major focus of the study, it certainly made the study results more robust and meaningful. The fact that this finding has been replicated several times before (Alexander & Link, 2003; Phelan & Link, 2004; Wallach, 2004) speaks to the *theoretical* strength of the relationship between contact and

stigma. Future studies on the golden section and mental illness stigma would be enriched if the type of contact was examined more specifically in relation to the golden section.

Limitations and Future Directions

Although a good majority of psychological research is conducted on college undergraduates and it does not appear to pose a threat to the validity of a study, college students *do* seem to be more sensitive to the rights of others. They also may be more aware of how their perspective influences their understanding of various phenomena. These claims would, of course, have to be empirically tested before they could be positively asserted. However, given that college students are asked to think critically throughout their college career, it is hard to deny the impression that they might provide qualitatively different answers than that of the general population. Therefore, future studies on mental illness stigma should recruit participants outside the college setting.

As previously mentioned, there is reason to believe that participants in this study may have been influenced by what is known as contrast effects. This is the idea that the order in which diagnostic labels were presented (or the fact that the labels were presented simultaneously) could have affected participants' responses. The influence of contrast effects in decision making has been thoroughly investigated in the context of psychological research (Conway Dato-on & Dahlstrom, 2003; Shapiro & Spence, 2005). Studies show that contrast effects can occur spontaneously and without conscious effort (Shapiro & Spence, 2005). In fact, even when participants in Shapiro and Spence's (2005) study were asked to make a conscious effort to ignore the information that they were previously exposed to, they were unable to do so. Failure to ignore judgments that were attached to the first stimulus presented affect judgments about subsequent stimuli

because of a reliance on the first stimulus as a basis for comparison. In the current study, participants were presented with all of the diagnostic labels simultaneously, making the potential influence of any one label on another label virtually indistinguishable.

Consider the following details revolving around the design of the golden section grid. For starters, the diagnostic labels used were exemplars of the greater judgment category of ‘types of ailments’. These labels were presented simultaneously and were in written form. The first diagnostic label that participants were exposed to served as a prime (which in this case, could be any number of labels due to their simultaneous presentation). Keeping these details in mind, now consider the results of a meta-analysis of context effects and decision making. According to Dato-on and Dahlstrom’s (2003) meta-analytic assessment of contrast effects, a number of factors contribute to the prevalence and strength of contrast effects. These researchers found that contrast effects are stronger: (1) for written cues than pictorial/physical cues, (2) for primes that are exemplars, and (3) when there is simultaneous presentation of the prime and other stimuli, particularly when stimuli include more than one exemplar. All of these factors were present in the current study, suggesting that contrast effects are likely to have played a role in participants’ judgments of diagnostic labels.

In thinking about how contrast effects may have influenced some of the findings of this research, future studies should consider isolating psychiatric labels from physical labels. For example, researchers could utilize a between subjects design by exposing half the participants exclusively to psychiatric disorders and the other half of participants exclusively to the physical illnesses. Without exposure to both *types* of ailments,

researchers could not argue that one type influenced the other (i.e., psychiatric labels impacting responses to the physical conditions or vice versa).

While establishing a replicated finding for the relationship between contact and stigma has its' obvious benefits, this study did not examine the relationship between contact and golden section ratings. Not only would it serve the research community well to examine this relationship, it would be especially interesting to explore the different types of contact and the golden section. Are people who have more personal contact with the mentally ill more likely to elicit a golden section pattern when rating psychiatric labels than people with professional contact with the mentally ill? Are people with brief exposure to the mentally ill more likely to obtain a reverse golden section pattern than people with long-term contact with the mentally ill? Breaking the study down into these detailed components could lead to significant findings that were not produced in the current study. Furthermore, including the type of contact as a variable in a future study would provide researchers with greater insight into mental illness stigma and how it can influence internal mental mechanisms for organizing information about the judgment of others.

CONCLUSION

Overall, the present study does not provide support for the golden section hypothesis. Participants holding a less stigmatizing view of the mentally ill did not provide ratings across all diagnostic labels in a pattern consistent with the golden section. However, it was discovered in a follow-up examination that these participants *did* rate psychiatric disorders in a golden section pattern. In fact, the only medical condition that these participants rated more positively than psychiatric labels was high blood pressure.

Although the majority of studies on the golden section suggest that the golden section is a default system for organizing information about others and can withstand a multitude of different influences (Benjafield & Adams-Webber, 1976; Benjafield & Green, 1978; Kahgee et al., 1982; Lee & Adams-Webber, 1987), there are clearly influences outside of this structured mechanism that can affect its durability. For example, people with a stigmatizing view of the mentally ill did not rate psychiatric labels in a golden section pattern. This result seems to suggest that having a stigmatized view of others has an influence on how one might typically organize information about others. However, the fact that a *reverse* golden section did not surface when people with highly stigmatizing attitudes were asked to judge various psychiatric labels suggests that the influence that stigma had on participant ratings was a small one.

The fact that the relationship between contact and stigma has been replicated in this study, as it has in numerous other studies (Alexander & Link, 2003; Phelan & Link, 2004), gives it theoretical strength and highlights the importance of educating the general public about mental illness. With the right education and proper exposure to the mentally ill, the ultimate goal of decreasing the prevalence of mental illness stigma can be realized. People are less likely to fear the mentally ill with greater knowledge about mental illness and more positive interactions with the mentally ill. Future studies on mental illness stigma would serve well to explore how specific types of contact with the mentally ill affect golden section ratings differently.

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TABLES

Table 1. Descriptive statistics for all diagnostic labels (N = 118)

	Minimum	Maximum	Mean	Std. Deviation
High blood pressure	.17	1.00	.6038	.19119
Lyme Disease	.08	1.00	.4647	.20482
Obsessive Compulsive Disorder	.17	1.00	.5890	.15513
Bipolar Disorder	.17	.92	.5847	.17500
Heart Disease	.00	1.00	.4400	.17766
Schizophrenia	.08	1.00	.5699	.15561
Diabetes	.08	.92	.3863	.15926
Total Golden Section All labels	.32	.80	.5198	.09377

*Table 2. Descriptive statistics for **low stigmatizers** / bottom 40% on MDPS (N= 47)*

	Minimum	Maximum	Mean	Std. Deviation
High blood pressure	.17	1.00	.5851	.21875
Lyme Disease	.08	1.00	.4734	.23124
Obsessive Compulsive Disorder	.17	1.00	.5887	.16152
Bipolar Disorder	.25	.92	.6170	.16906
Heart Disease	.00	.92	.4557	.19102
Schizophrenia	.08	1.00	.5691	.17490
Diabetes	.08	.92	.3901	.17385
Psychiatric labels	.33	.86	.5916	.12636
Total Golden Section – All labels	.33	.80	.5256	.10604

*Table 3. Descriptive statistics for **high stigmatizers** / top 40% on MDPS (N = 47)*

	Minimum	Maximum	Mean	Std. Deviation
High blood pressure	.17	.92	.5798	.16932
Lyme Disease	.17	.92	.4628	.17874
Obsessive Compulsive Disorder	.33	.92	.5957	.16755
Bipolar Disorder	.17	.83	.5426	.19104
Heart Disease	.17	.83	.4238	.16192
Schizophrenia	.25	.92	.5621	.15095
Diabetes	.08	.92	.3883	.16326
Psychiatric labels	.36	.89	.5668	.12159
Total Golden Section – All labels	.32	.75	.5079	.09505

Table 4. MDPS descriptive statistics

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Stigma Score	118	31	8	39	21.51	6.442
High Stigmatizers	47	16	23	39	27.96	3.629
Low Stigmatizers	47	11	8	19	15.30	3.169

Table 5. Descriptive statistics for contact

	N	Range	Minimum	Maximum	Mean	Std. Deviation
CONTACT SCORE	118	7	0	7	3.26	2.061

Background Information

This questionnaire is designed to provide us with information that will help us describe the people who participated in this research. All information is anonymous and confidential. Please respond to each item by either typing in the appropriate answer or checking the appropriate box.

1) What is your sex?

- Female
- Male

2) What is your current age? _____

3) Please check the box that best indicates your ethnic/racial background:

- White/Caucasian
- Black/African American
- Asian/Pacific Islander
- Latino/Hispanic
- Native American/American Indian
- Multiracial
- Other (please indicate): _____

4) Please indicate the level of education you have achieved:

- Some high school
- Completed high school/obtained a GED
- Some college
- Completed college, undergraduate
- Some graduate school
- Completed graduate school
- Other (please indicate) _____

Categorize each of the individuals described below by using the adjective pairs provided. If you think the first word in the adjective pair applies to the individual more, then select a “1” from the drop down menu box. If you think the second word of the pair applies to the individual more, then select a “2”. For example, if you consider someone with heart disease to be more lethargic than energetic, you would select a "1" from the drop-down menu box. However, if you consider the individual to be more energetic than lethargic, you would select a "2". Don't dwell on them for too long; just go by your first impressions.

	High Blood Pressure	Lyme Disease	Obsessive Compulsive Disorder	Bipolar Disorder	Heart Disease	Schizophrenia	Diabetes
Generous – Stingy							
Unpleasant- Pleasant							
True – False							
Unfair – Fair							
Active – Passive							
Lethargic – Energetic							
Sharp - Dull							
Calm – Excitable							
Strong - Weak							
Timid – Bold							
Hard – Soft							
Delicate – Rugged							

Appendix B – Golden Section Grid

Please indicate your level of agreement with the following statements using the scales provided:

1) People with mental disorders could be reliable friends.*

0	1	2	3
Strongly disagree	Tend to disagree	Tend to agree	Strongly agree

2) When people with mental disorders are admitted to a mental hospital, their spouses should be permitted to divorce them unconditionally.

0	1	2	3
Strongly disagree	Tend to disagree	Tend to agree	Strongly agree

3) It is dangerous for a person with a mental disorder to live freely.

0	1	2	3
Strongly disagree	Tend to disagree	Tend to agree	Strongly agree

4) People with mental disorders should not have children, in order to avoid hereditary handicaps.

0	1	2	3
Strongly disagree	Tend to disagree	Tend to agree	Strongly agree

5) People with mental disorders should be isolated in mental hospitals located far away from residential areas.

0	1	2	3
Strongly disagree	Tend to disagree	Tend to agree	Strongly agree

6) Patients in mental hospitals should have the right to vote.*

0	1	2	3
Strongly disagree	Tend to disagree	Tend to agree	Strongly agree

7) People with mental disorders would be stigmatized all their life.

0	1	2	3
Strongly disagree	Tend to disagree	Tend to agree	Strongly agree

8) Mental hospitals are needed to prevent people with mental disorders from committing violence and injuring others.

0	1	2	3
Strongly disagree	Tend to disagree	Tend to agree	Strongly agree

9) Opinions of patients should be respected in terms of leaving or staying out of mental hospitals.*

0	1	2	3
Strongly disagree	Tend to disagree	Tend to agree	Strongly agree

10) Unlike those with physical disabilities, people with mental disorders would not be able to work even if sheltered workshops were created.

0	1	2	3
Strongly disagree	Tend to disagree	Tend to agree	Strongly agree

11) Psychiatrists alone are responsible for treating people with mental disorders.

0	1	2	3
Strongly disagree	Tend to disagree	Tend to agree	Strongly agree

12) It is possible for people with mental disorders to organize self-help groups such as associations of diabetics or people with liver disease.*

0	1	2	3
Strongly disagree	Tend to disagree	Tend to agree	Strongly agree

13) Methods of caring for individuals with mental disorders should be left to appropriate specialists, even if non-professional people have concerns or criticisms about such methods.

0	1	2	3
Strongly disagree	Tend to disagree	Tend to agree	Strongly agree

14) I will not become mentally ill.

0	1	2	3
Strongly disagree	Tend to disagree	Tend to agree	Strongly agree

15) I would not object to living with people with mental disorders.*

0	1	2	3
Strongly disagree	Tend to disagree	Tend to agree	Strongly agree

16) I would be willing to work with people with mental disorders.*

0	1	2	3
Strongly disagree	Tend to disagree	Tend to agree	Strongly agree

17) I would object to having people with mental disorders as neighbors.

0	1	2	3
Strongly disagree	Tend to disagree	Tend to agree	Strongly agree

18) If I were unmarried, I would not become romantically involved with a person with a mental disorder.

0	1	2	3
Strongly disagree	Tend to disagree	Tend to agree	Strongly agree

Appendix C -MDPS

19) Many people with mental disorders commit crimes.

0	1	2	3
Strongly disagree	Tend to disagree	Tend to agree	Strongly agree

20) People should be discouraged from marrying individuals with mental disorders.

0	1	2	3
Strongly disagree	Tend to disagree	Tend to agree	Strongly agree

21) The term 'mental illness' annoys me.*

0	1	2	3
Strongly disagree	Tend to disagree	Tend to agree	Strongly agree

22) Psychiatrists need to be stricter in their handling of people with mental disorders.

0	1	2	3
Strongly disagree	Tend to disagree	Tend to agree	Strongly agree

Please respond with either a “yes” or a “no” to the following questions:

- 1) Have you ever known a person who was hospitalized in a mental institution?
 - Yes
 - No

- 2) Have you ever worked for pay or done volunteer work with people who have been hospitalized for a mental illness?
 - Yes
 - No

- 3) Do you have any friends who work for pay in a place where the mentally ill are cared for?
 - Yes
 - No

- 4) Do you have any friends who do volunteer work in a place where the mentally ill are cared for?
 - Yes
 - No

- 5) Have you ever visited an agency in a community where former mental patients are given job training?
 - Yes
 - No

- 6) Have you ever been in a mental hospital as a visitor?
 - Yes
 - No

- 7) Have you ever visited a mental health clinic or mental health center?
 - Yes
 - No

