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SOCIAL DISTANCE FROM INDIVIDUALS WITH DEPRESSION: SOCIAL DOMINANCE
ORIENTATION, DEPRESSION STIGMA, & MENTAL ILLNESS EXPOSURE

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ABSTRACT

Social distance is an individual's willingness to associate (or not) with another person. Prior research has found that both social dominance orientation and prior exposure to mental illness are associated to social distance but depression related stigma has not yet been directly linked. In this study, 425 participants were exposed to vignettes portraying an individual who disclosed a depression diagnosis, an individual who disclosed a depression diagnosis and was currently being treated with antidepressant medication, or an individual who did not disclose any current diagnosis (control). Participants exposed to the both depression vignettes (with and without medication) desired significantly less social distance compared to the control vignette. Those who held greater stigmatizing beliefs regarding depression, greater social dominance orientation, and less personal exposure to mental illness reported wanting greater social distance to the individual diagnosed with depression, regardless of treatment status. When exploring the relationship between these variables, having greater stigmatizing beliefs and a lack of mental illness exposure were significant predictors of social distance. These results suggest that both mental illness exposure and depression related stigma, can be useful areas of interventions to reduce negative attitudes towards individuals diagnosed with depression.

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Introduction

Depression is the leading cause of disability in the world, impacting approximately three hundred and fifty million people worldwide (World Health Organization, 2015). Mental illness stigma or discrimination often accompanies mental illness diagnoses such as depression (Lasalvia et al., 2013). Antidepressant medications is a common treatment option for depression, and are one of the most utilized prescription drugs in the United States (National Center for Health Statistics, 2014). Since 1994, antidepressant use has risen over four hundred percent in the United States (Pratt, Brody, & Gu, 2011) and this pattern is similar worldwide (Helgason, Tomasson, & Zoega, 2004). Although antidepressants have the ability to help individuals function better, they may contain an additive level of stigma coupled with the stigma associated with a depression diagnosis.

Social distance can be defined as someone's willingness to associate or interact with a specific individual or group (Link, Cullen, Frank, & Wozniak, 1987). Higher levels of desired social distance indicate less willingness to associate with a specific individual or group. Prior research has explored this phenomena using vignettes describing scenarios featuring a person diagnosed with a mental illness and having participants indicate their willingness to engage close in a relationship with the described person (e.g., move into the house next door or go to a party with the individual; Link, Yang, Phelan, & Collins, 2004). Link and colleagues (1999) found that more social distance is desired from individuals with mental disorders than individuals who were experiencing typical worries. These vignettes portrayed individuals as having major depression, schizophrenia, a drug dependence, or an alcohol dependence; all incurred more desired social distance than someone who was experiencing typical worries. Similar findings from around the

world have shown that people desire more social distance from individuals diagnosed with a mental illness (Adewuya & Makanjuola, 2008; Ayazi et al., 2014; Eker, 1989; Lauber, Nordt, Falcato, & Rossler, 2004).

Depression has been identified as a mental illness capable of eliciting a significant amount of desired social distance. In a study of former and current pharmacy students, Bell, Johns, and Chen (2006) found elevated levels of desired social distance towards people diagnosed with depression. Another study found that a large portion of the population agreed with socially distancing statements such as not wanting to rent their house to an individual diagnosed with depression (Ozmen et al., 2004).

Levels of desired social distance also vary among perceived severity of the mental illness diagnosis. Mental illness diagnoses such as schizophrenia are stereotyped as being more severe dangerous and are subject to greater desired social distance (Angermeyer & Matschinger, 2003; Corrigan et al., 2001). Angermeyer and Matschinger (2003) conducted over 5,000 interviews and found that endorsing schizophrenia as dangerous had a strong relationship with greater desired social distance. Findings concerning perceived dangerousness have been extended to individuals with substance abuse disorders (Lauber et al., 2004), but not individuals diagnosed with depression (Silton, Fannely, Milstein, & Vaaler, 2011), which is typically seen as less severe. Although illness severity has proven important in desired social distance, no research to the authors' knowledge has examined desired social distance in relation to mental health treatment as a proxy for illness severity. In this study, we will explore how treatment, in the form of antidepressant medication as a proxy for illness severity, plays a role in desired social distance.

Variation in Social Distance

Desired social distance towards mental illness can vary based on age and gender. A study by Webb, Jacobs-Lawson, and Waddell (2009) investigated attitudes of older adults towards peers diagnosed with mental illnesses. They found that participants desired more social distance from individuals diagnosed with a mental illness, but women desired significantly less social distance than men. In a large sample of Swiss adults ages 16-76, Lauber and colleagues (2004) found that being older was a significant predictor of high levels of desired social distance from individuals with schizophrenia. Similar results have been found regarding depression by Angermeyer and Matschinger (2004), who observed that desired social distance increased with age. Interestingly, over time there have been no significant changes in desired social distance from individuals diagnosed with depression (Angermeyer & Matschinger, 2004; Pescosolido et al., 2010). These results suggest the link between age and desired social distance is not due to cohort effects and that attitudes towards depression have not changed during recent history.

Social Dominance Orientation

Social dominance orientation (SDO) is the degree to which an individual feels that their group is inherently superior to another. Those high in social dominance orientation build off of an “us” versus “them” mentality that allows an individual to separate themselves from another person or group (Pratto, Sidanius, Stallworth, & Malle, 1994). Stigmatization models emphasize the “us” from “them” paradigm in negative attitude formation (Link & Phelan, 2001); individuals high in social dominance orientation focus on stereotypes to separate themselves from the “them” (Pratto et al., 1994). Those high in social dominance orientation desire higher levels of social distance towards individuals of groups which they do not belong to (Sidanius, Pratto, & Mitchell, 1994).

High levels of social dominance orientation have been related to distancing behaviors towards individuals portrayed as generally having a psychological disorder (Bizer, Hart, & Jekogian, 2012). Social dominance orientation has also been shown to be a significant predictor of increased social distance from individuals specifically with alcohol abuse problems and depression (Phelan & Basow, 2007). Related, Kvalle and Haslam (2016) conducted a study which asked participants to indicate their willingness to interact with individuals diagnosed with either depression or schizophrenia. For both diagnoses, social dominance orientation was a significant predictor of greater desired social distance. Collectively these findings support the positive association between social dominance orientation and desired social distance.

Depression Stigma

Personal depression stigma is an individually held attitude or collection of ideas that identify depression as a blemish or detriment (Griffiths et al., 2004). Holding these beliefs specifically identifies depression as a detrimental aspect of an individual or group, which may generate less willingness to associate with someone diagnosed with depression. Research with Australian adults has shown that increased levels of depression stigma were predicted by being older, male, and having lower levels of education (Griffiths, Christensen, & Jorm, 2007). Prior research on general mental illness stigma and social distance yields insight into the relation between depression stigma and desired social distance.

Anderson and colleagues (2015) exposed participants to vignettes portraying individuals with social anxiety disorder, depression, or general mental illness and measured the participant's general mental illness stigma and desired social distance from the portrayed individual. They observed that greater stigmatizing attitudes were associated with higher levels of desired social distance. Similarly, Angermeyer and Matschinger (2003) exposed adults to a vignette portraying

either depression or schizophrenia, and then measured desired social distance and proponents of mental illness stigma. They found that agreeing with stigmatizing attributes of an individual with a mental illness diagnosis was associated with more desired social distance from the individual portrayed in the vignette. These results suggest that holding negative views specifically regarding depression, may be predictive of less willingness to associate with an individual diagnosed with depression.

Exposure to Mental Illness

Previous research has found that prior exposure to individuals with mental illness can reduce social distance towards individuals with a mental illness diagnosis (e.g., Angermeyer & Matschinger, 1996; Corrigan et al., 2001). Using structured interviews with over 6,000 adults, Angermeyer and Matschinger (1996) found that more personal exposure to mental illness was associated with less desired social distance. Specifically, the researchers found that desired social distance was highest for individuals with no prior exposure, lower for those who had friend/acquaintances or who worked with individual diagnosed with mental illness, and lowest for those who had a family member diagnosed with a mental illness.

These effects of exposure to mental illness reducing desired social distance extend to the context of individuals diagnosed with depression and the amount of social distance desired from them. Angermeyer, Matschinger, and Corrigan (2004) found that personal experience and contact with family members or friends diagnosed with a mental illness are capable of reducing desired social distance towards an individual diagnosed with depression. Exposure to individuals diagnosed with depression has been associated with lower levels of perceived dangerousness or fear towards those diagnosed with depression (Schomerus, Matschinger, & Angermeyer, 2013).

Buhler and Karimi (2008) implemented an intervention which exposed pharmacy students to individuals diagnosed with depression and schizophrenia. Before the intervention students completed a questionnaire addressing the cause of the diseases, a diagnosed individual's capabilities, and desired social distance for both depression and schizophrenia. After attending the exposure intervention, the students completed the pre-intervention questionnaire. Students who attended the interventions desired less social distance than the students who did not attend the intervention. The research in this area demonstrates an association between reduced levels of desired social distance from individuals diagnosed with mental illnesses, specifically depression, by exposing individuals to people who have been diagnosed with mental illnesses.

The Current Study

Based on information regarding depression and social distance, we hypothesized that individuals diagnosed with depression and those diagnosed with depression and prescribed antidepressant medication, would incur more desired social distance than an individual who was not diagnosed with depression. In addition, we hypothesized that participants would report greater desired social distance from the individual who was prescribed antidepressant medication compared to those without a diagnosis and those diagnosed but not prescribed medication. We also expected to find individuals who report desiring more social distance would also report higher social dominance orientation scores, greater depression related stigma, and less exposure to individuals with mental illness diagnoses. Furthermore, it was expected that social dominance orientation, depression stigma, and mental illness exposure would be significant predictors of desired social distance toward an individual diagnosed with depression.

Method

Participants

In this study, 425 students from a public university in the northeastern United States were recruited from psychology undergraduate courses. To participate in the study participants had to be enrolled in a psychology class and be at least eighteen years of age. Data was collected from a total of 449 participants but some were excluded from the analyses due to incomplete data ($n = 17$) and being under the age of 18 at the time of data collection ($n = 7$). Analyses were conducted using the remaining 425 participants.

Participants were, on average, 19.20 years of age ($SD = 2.91$) and many self-identified as female (64.7%). Participants described themselves as predominately White or Caucasian (77.9%). A minority of participants self-identified their race/ethnicity as Asian (6.8%), African American or Black (5.9%), Hispanic or Latino (3.8%), Biracial (3.3%), Multiracial (0.9%), and Other (1.2%). Most participants reported being exposed to an individual diagnosed with a mental illness at some point during their lives (81.2%), including a fifth of participants (20%) who had been diagnosed with a mental illness themselves. Of the 20% of participants who had been diagnosed with a mental illness, 72.9% had been prescribed medication to treat their mental illness. At the time of data collection, a significant number of participants diagnosed with a mental illness were actively taking medication to treat their condition (38.8%).

Procedure

Psychology professors at a public university were given a flyer explaining the study and asked to distribute the information to the undergraduate students in their classes. The recruitment

flyer included a brief description of the research study, a link to access the study's online consent form, and contact information for the principle investigator. Students could access and consent form and survey for a period of three weeks. Those who completed the consent form were instructed to read a randomly assigned vignette, and then completed the Social Distance Scale (Liekens, Smits, Laekeman, & Foulon 2012) which asked questions specifically about the character portrayed in the vignette. Participants then completed the Social Dominance Orientation Scale (Pratto et al., 1994), followed by the Depression Stigma Scale (Griffiths et al., 2004), and demographic survey. After completing the survey, participants were debriefed. The survey took about thirty minutes to complete, and students who completed the survey were given 1% extra credit towards their final course grade. This research was approved by the Pennsylvania State University Institutional Review Board.

Materials

Demographics. Participants were asked to identify their age, sex, gender, sexual orientation, ethnicity, and religious affiliation.

Vignette. Participants were randomly assigned to one of three vignettes. Each vignette described a scenario in which the participant met a friend for lunch, and a friend of that friend, named Sam, came along. In the control vignette the participant discovered that they shared similar interests and hobbies with Sam but there was no mention of Sam being diagnosed with depression:

You and a friend are meeting for lunch; your friend has brought along one of their male/female friends name Sam. Over the course of the lunch you discover that Sam shares similar interests with you, and participates in many of the same hobbies.

The first experimental vignette utilized the same wording as the control, but added the statement that Sam had been diagnosed with depression:

You and a friend are meeting for lunch; your friend has brought along one of their male/female friends named Sam. Over the course of the lunch you discover that Sam shares similar interests with you, and participates in many of the same hobbies. You also learn that he/she has been diagnosed with depression, and that depression interferes with his/her daily life.

The second experimental vignette utilized the same wording as the prior vignettes but added the statement that Sam had been diagnosed with depression and prescribed psychotropic medication:

You and a friend are meeting for lunch; your friend has brought along one of their male/female friends named Sam. Over the course of the lunch you discover that Sam shares similar interests with you, and participates in many of the same hobbies. You also learn that he/she has been diagnosed with depression. Sam is currently taking depression medication because depression has been interfering with his/her daily life.

Each of the three vignettes had two versions in which Sam was portrayed as either a male or female, by changing gender pronouns. There were no differences in the findings based on the gender of the individual described in the vignette.

Social Distance. The Social Distance Scale (SDS) measures how closely an individual is willing to associate with another person (Link et al., 1987). This scale has been altered in prior research to specifically address desired social distance between the participant and an individual who had been hospitalized with depression (Liekens et al., 2012). For this study, the altered

Social Distance Scale (Liekens et al., 2012) was further adapted to measure more general depression related desired social distance, and questions were made specific to Sam, the character in the vignettes. Instead of asking how willing the participant was to do things such as “work alongside a person who had previously been hospitalized with depression”, it asked participants to indicate their willingness to do things specifically related to Sam, the character portrayed in the vignette (e.g., “work alongside Sam”, “have Sam as a neighbor”, and “recommend Sam for a job.”). In addition, some language was changed to increase understanding and identification with the questions for the typical American undergraduate student. For example, the word “flat” was changed to “apartment” and we inserted the word future into two statements, “have Sam as a babysitter for your (future) child; have one of your (future) children marry Sam.” The seven items were scored on a Likert scale from 1 = *definitely willing* to 4 = *definitely not willing*. Scores were summed, with total scores ranging from 7 to 28, higher scores indicate greater desired social distance, indicating less willingness to associate with Sam. Cronbach’s Alpha was .80 (95% confidence interval [CI] [.76, .82]).

Social Dominance Orientation. Social dominance orientation (SDO) measures a person’s belief that their group is inherently superior to another (Pratto et al., 1994). Participants indicated on a seven point Likert scale if they agreed (7 = *very positive*) or disagreed (1 = *very negative*) with each of fourteen statements. Sample items include, “Some groups of people are simply not the equals of others”, “Some people are just inferior to others”, and “Some people are more worthy than others.” Greater social dominance orientation is seen as “worse”, and means that an individual feels positively towards oppressing or negative statements. Seven of fourteen items were reverse coded. The fourteen responses were averaged, with higher scores indicating greater social dominance orientation; meaning individuals were more likely to believe that they

are inherently superior to other people or groups. Cronbach's Alpha was .87 (95% confidence interval [CI] [.85, .89]).

Depression Stigma. The Depression Stigma Scale (DSS) was used to measure personal depression stigma (Griffiths et al., 2004). Personal depression stigma is comprised of attitudes about depression held by the participants themselves. For example, participants were asked to indicate how much they agreed or disagreed with statements such as, "People with depression are dangerous", "People with depression could snap out of it if they wanted", and "Depression is not a real medical illness." All items were scored on a five point Likert scale from 0 = *strongly disagree* to 5 = *strongly agree* and summed, with higher scores indicated negative attitudes towards depression. The scale was reliable and had a Cronbach's Alpha of .85 (95% confidence interval [CI] [.82, .87]).

Mental Illness Exposure. Participants were asked if they had been, or had family members, significant others, friends, coworkers/classmates who had ever been diagnosed with a mental illness (e.g. "Have you ever had a significant other, whom you're not married to, who has been diagnosed with a mental illness?" and "Have you ever been diagnosed with a mental illness?"). For each category the participant selected yes, that they did know an applicable individual diagnosed with a mental illness, they were given a score of 1. Scores on mental illness exposure ranged from 0 = *no exposure* to 5 = *high exposure*.

Results

First, we conducted an ANOVA to compare the levels of desired social distance towards the individuals in the vignettes exploring if there are differences between the three groups: undiagnosed (control), diagnosed with depression (diagnosed), and diagnosed with depression and prescribed medication (diagnosed with medication). Second, we performed bivariate correlations to determine if demographic variables, social dominance orientation, depression stigma, and mental illness exposure are associated with the participant's level of desired social distance. Finally, using a hierarchical multiple regression we explored which factors are the best predictors of desired social distance, while controlling for demographic differences.

To analyze the impact of the vignettes on desired social distance, we conducted a one-way between-groups analysis of variance (ANOVA). Participants were divided into three groups based on the vignette they had been randomly assigned (control, diagnosed, diagnosed with medication) and their reported levels of social distance were compared. There were no differences between the groups in mental illness exposure, personal diagnoses, social dominance orientation, depression stigma, age, or gender ($p > .05$). Contrary to our hypothesis, the diagnosed ($M = 15.25$, $SD = 3.20$) and diagnosed with medication ($M = 14.98$, $SD = 3.39$) groups reported significantly lower desired social distance, $F_{(2, 412)} = 5.60$, $p = .004$, compared to the control group ($M = 16.24$, $SD = 3.24$). The diagnosed and diagnosed with medication groups did not significantly differ. Participants desired greater desired social distance when exposed to the control group than when exposed to the individual diagnosed with depression or prescribed medication (see Table 1).

Table 1*Comparing Social Distance Across Vignette Groups.*

Variable	Groups by vignette exposure			<i>F</i>
	Control (<i>n</i> = 133)	Diagnosed with depression (<i>n</i> = 147)	Diagnosed with depression and prescribed medication (<i>n</i> = 145)	
	<i>M (SD)</i>	<i>M (SD)</i>	<i>M (SD)</i>	
Social distance ^a	16.24 (3.24) ^c	15.25 (3.20) ^b	14.98 (3.39) ^b	5.60**

Notes. ^a Higher social distance scores indicate a desire for more social distance (less willing to associate).

^{bc} Values that share a superscript are not significantly different from one another.

** $p < .01$.

Next, we examined the associations between demographic variables, desired social distance, social dominance orientation, personal depression stigma, and mental illness exposure using bivariate Pearson correlations. We excluded participants who were exposed to the control vignette from the remaining analyses to look specifically at how these variables impacted desired social distance from the individual diagnosed with depression in the vignette. Age was significantly related only to depression stigma, $r = -.15$, $n = 280$, $p = .01$, meaning younger participants had more stigmatizing beliefs about depression. Gender of the participant (1 = *female*, 0 = *male*) was significantly associated with social dominance orientation, $r = -.18$, $n = 287$, $p = .002$, depression stigma, $r = -.16$, $n = 280$, $p = .007$ and mental illness exposure, $r = .23$, $n = 287$, $p < .001$. Male participants reported higher levels of social dominance orientation and

higher levels of depression stigma. In addition, identifying as a female was associated with having prior exposure to mental illness. As found in previous research, social dominance orientation was significantly associated with desired social distance, $r = .21, n = 272, p < .001$, such that those with higher levels of social dominance orientation were less willing to associate with the individual diagnosed with depression in the vignette. Personal depression stigma was significantly associated with desired social distance, $r = .44, n = 280, p < .001$, individuals with higher depression stigma were less willing to associate with the individual diagnosed with depression. Having prior exposure to mental illness was significantly associated with lower desired social distance scores, $r = -.33, n = 279, p < .001$, demonstrating that those who had experience with individuals whom had been diagnosed with a mental illness were more willing to associate with the individual diagnosed with depression. As expected, higher levels of social dominance orientation and personal depression stigma were related to greater desired social distance while exposure to mental illness was associated with less desired social distance (see Table 2).

Table 2

Correlations Between Demographic Variables, Social Distance, Social Dominance Orientation, Personal Depression Stigma, and Prior Exposure to Mental Illness.

	1	2	3	4	5	6
Age	--					
Gender ^a	.08	--				
Social distance ^b	-.03	-.08	--			
Social dominance orientation ^c	-.06	-.18**	.21***	--		
Depression stigma ^d	-.15*	-.16**	.44***	.41***	--	
Mental illness exposure ^e	.15**	.23***	-.33***	-.13*	-.43***	--

Notes. ^a 1 = *females*; 0 = *males*. ^b Higher social distance scores indicate a desire for more social distance (less willing to associate). ^c Higher values indicate greater social dominance. ^d Higher values indicate greater stigma towards depression ^e Higher scores indicate greater exposure to individuals diagnosed with a mental illness.

* $p < .05$. ** $p < .01$. *** $p < .001$.

To determine the best predictors of desired social distance, while controlling for age, sex, and experimental group exposure, we conducted a hierarchical multiple regression (see Table 3). We excluded participants who were exposed to the control vignette from this analysis. None of

the assumptions of multiple regressions were violated (e.g., multicollinearity, normality, homoscedasticity).

In step 1, we entered the control variables, age, gender of participants, and experimental group. None of these variables were found to be significant predictors of desired social distance, $F_{(3, 275)} = .81, p = .49$. In step 2, social dominance orientation was entered into the model and found to be a significant predictor of desired social distance $F_{(4, 267)} = 3.86, p = .005$, adjusted $R^2 = .04$. This indicates that social dominance orientation accounted for 4% of the variance in observed social distance scores. In step 3, personal depression stigma was entered into the model. Personal depression stigma was found to be a significant predictor of desired social distance, $F_{(5, 260)} = 12.96, p < .001$, adjusted $R^2 = .18$. However, when personal depression stigma was entered into the model, social dominance orientation was no longer a significant predictor of desired social distance. These results show that when controlling for social dominance orientation, personal depression stigma predicted 18% of the variance in desired social distance scores. Lastly in step 4, prior exposure to mental illness was entered into the model. Exposure to mental illness was a significant predictor of desired social distance, $F_{(6, 259)} = 12.76, p < .001$; adjusted $R^2 = .21$, indicating that previous experience with mental illness uniquely accounted for an additional 3% of the variance in desired social distance. In all, greater personal depression stigma and less prior exposure to individuals with mental illness was predictive of greater desired social distance from an individual diagnosed with depression.

Table 3*Hierarchical Multiple Regression Examining the Predictors of Social Distance.*

Variable	Social distance ^a		
	<i>B</i>	<i>SE B</i>	β
Step 1			
Age	-.02	.06	-.02
Gender ^b	-.54	.41	-.08
Experimental group ^c	.30	.40	.05
R^2		.00	
ΔR^2		.00	
<i>F</i>		.81	
Step 2			
Age	-.01	.06	-.01
Gender ^b	-.28	.41	-.04
Experimental group ^c	.43	.39	.06
Social dominance orientation ^d	.74	.21	.21***
R^2		.04	
ΔR^2		.04	
<i>F</i>		3.60**	
Step 3			
Age	.05	.06	.04
Gender ^b	.20	.38	.03
Experimental group ^c	.22	.36	.03
Social dominance orientation ^d	.17	.21	.05
Depression stigma ^e	.26	.04	.43***

R^2		.18	
ΔR^2		.14	
F		13.19***	
Step 4			
Age	.06	.06	.06
Gender ^b	.42	.39	.06
Experimental group ^c	.16	.36	.02
Social dominance orientation ^d	.22	.21	.06
Depression stigma ^e	.21	.04	.35***
Mental illness exposure ^f	-.40	.13	-.19**
R^2		.21	
ΔR^2		.03	
F		12.91***	

Notes. ^a Higher values indicate greater levels of desired social distance (less willingness to associate). ^b 1

= females; 0 = males. ^c 1 = depression only; 0 = depression with medication. ^d Higher values indicate great

social dominance. ^e Higher values indicate greater stigma towards depression. ^f Higher values indicate

greater prior exposure to individuals with mental illness.

** $p < .01$. *** $p < .001$.

Discussion

Depression diagnoses have been linked with higher levels of desired social distance (e.g., Bell et al., 2006) and there is reason to believe that medications used to treat depression may exacerbate this effect. We found that people are more willing to associate with individuals diagnosed with depression and individuals diagnosed with depression and prescribed antidepressant medication compared to individuals without a depression diagnosis. Less willingness to associate towards individuals with depression was associated with higher social dominance orientation, higher depression stigma, and less prior exposure to mental illness. It was determined that mental illness exposure and personal depression stigma were significant predictors of desired social distance, with depression specific stigma being the most powerful predictor.

We found that the undiagnosed individual incited greater desired social distance than the individual diagnosed with depression, prescribed medication for depression or not. This finding directly contradicted our hypothesis. It was expected that participants would desire the most social distance from individuals diagnosed with depression and taking medication, followed by those solely diagnosed with depression, and then the undiagnosed individual. This expectation was based on prior research which found that individuals diagnosed with depression incur more desired social distance than someone who is portrayed as not having a mental illness (Bell et al., 2006; Ozmen et al., 2004), and that illness severity increases desired social distance (Angermeyer & Matschinger, 2003; Corrigan et al., 2001). There are some explanations for the contrary finding.

Personal communication and disclosure may partially account for these contradictory findings. Specifically, personal communication may have mitigated increases in desired social

distance towards the individuals diagnosed with depression. Buchan, Johnson, and Croson (2006) conducted a study in which participants interacted with other individuals through a discussion of a personal topic or by asking random questions. Participants who had engaged in a personal conversation acted in a more prosocial manner towards the individual they had a conversation with. Similarly, the underpinning of relationship formation has been identified as the disclosure of personal narratives and information (DeCapua, Berkowitz, & Boxer, 2006). The character in the depressed and depressed with medication vignettes told the participants that they had a mental illness. In other words, they were discussing personal information which included an intimate disclosure. It is possible that participants exposed to this information felt that they had a connection to the vignette character, and hence were more willing to associate with them.

Additionally, the absence of a difference between desired levels of social distance towards those diagnosed with depression and those taking medication for a depression diagnosis is important to note. Although this contradicted our hypothesis, it does demonstrate an encouraging concept. We believed that antidepressant medication would be capable of incurring greater desired social distance by possibly creating the perception of increased severity. This was based on information regarding perceived severity or dangerousness relating to higher levels of desired social distance (Angermeyer & Matschinger, 2003; Corrigan et al., 2001; Lauber et al., 2004; Siltan et al., 2011). Finding significant differences between the medication and depressed only vignettes would have suggested that medication taken to treat depression signified a greater degree of severity of depression, hence, a decreased willingness to associate with an individual taking antidepressant medication. This finding may suggest that being prescribed medication for depression does not signify a greater severity of an individuals' depression diagnosis.

Upon examination of the variables associated with desired social distance, we found that social dominance orientation, personal depression stigma, and mental illness exposure were significantly associated with desired social distance. Prior research has found similar results. Social dominance orientation measures the separation from the “other” group (Pratto et al., 1994). Hence, individuals who see the individual diagnosed with depression as part of the “other” group would want to put more social distance (or be less willing to associate) between themselves and the specified individual, which was supported by our results. Similarly, having stigmatizing attitudes towards depression involves separating oneself from another individual or group (Duckitt & Sibley, 2007). By definition one would anticipate that those who hold more stigmatizing attitudes about depression would desire more social distance, which was also supported by our results. In addition, having prior exposure to individuals with mental illnesses was negatively related to desired social distance. These results support previous research indicating that less mental illness exposure is related to desiring greater social distance (Angermeyer & Matschinger, 1996; Corrigan et al., 2001).

Lastly, we explored which of these factors were the greatest predictors of desired social distance, while controlling for additional variables. Age, gender, and experimental group (prescribed medication or not) were not significant predictors of desired social distance. Social dominance orientation was a predictor of desired social distance until depression stigma was accounted for, then social dominance orientation was no longer significant. Social dominance orientation pertains to elevating oneself above another individual or group (Pratto et al., 1994). Personal depression stigma references an individual associating a negative connotation with a specific individual because they belong to a group or possess a particular characteristic (Griffiths et al., 2004). The major difference between the two concepts is that social dominance orientation

emphasis a social hierarchy and depression stigma focuses on the negative feelings you have about an individual specifically diagnosed with depression. In sum, although these concepts are related, depression stigma carries more weight in determining one's willingness to associate with an individual diagnosed with depression.

In all, personal depression stigma and mental illness exposure were significant predictors of desired social distance. Individuals who were more stigmatizing towards depression were less willing to associate with people diagnosed with depression. These results confirm the expectation that having greater stigmatizing beliefs about depression increases your desired social distance towards individuals diagnosed with depression. Additionally, we found that a decrease in willingness to associate with individuals diagnosed with depression was predicted by a lack of previous exposure or contact with individuals diagnosed with a mental illness. This finding replicates the findings of previous studies (Angermeyer et al., 2004; Buhler & Karimi, 2008). In addition to replicating previous findings, an association has been drawn between personal depression stigma and desired social distance. These two factors have the potential of impacting how depression interventions are designed.

Implications

There are several important points to take from this study, specifically, the role of antidepressant medication in desired social distance and possible intervention strategies to decrease stigmatizing behaviors. Antidepressant medication did not seem to produce an additive effect in stigmatizing behavior. It is reasonable to believe that medication for depression, in itself, does not make others believe that one has a more severe case of depression. These results

could indicate that medication treatment for depression will not induce any further stigmatizing behavior than having a depression diagnosis alone.

These results also have implications for interventions aimed at reducing stigmatizing behaviors towards individuals diagnosed with depression. We found that greater depression stigma and less exposure to individuals diagnosed with mental illness were related to greater desired social distance. Based on these results, intervention programs for the public should include a focus on reducing depression related stigma, which was the largest predictor of desired social distance in this study. However, they should also incorporate participant's lifetime exposure to individuals who are diagnosed with a mental illness. An intervention that utilizes both of these strategies might not only induce changes from each factor individually, but may also create interaction effects due to the association between mental illness exposure and depression stigma. Making use of both of these factors instead of one could improve the effectiveness of intervention programs.

Strengths & Limitations

This study had several strengths and limitations which should be taken into account. One factor was that the majority of participants either had been personally diagnosed with a mental illness or knew someone who did. Angermeyer and Matschinger (1996) found that desired social distance from a person with a mentally illness decreased as an individual's personal contact with mental illness became more personal. It could be that the sample in this study was less stigmatizing towards individuals with mental illness than is typically found in the general population. Although, having a sample in which half of the participants had prior mental illness exposure allowed us to examine this variable as a predictor of social distance. Future research

should take prior exposure into account by examining a population with less exposure to mental illness. Additionally, we were not able to compare the effect of social dominance orientation on desired social distance of participants diagnosed with depression as compared to other mental illness diagnoses because we did not collect specific mental illness diagnoses of participants. Conversely, our groups showed no significant differences in total mental illness diagnoses.

Secondly, the disclosure of personal information in the vignettes may have obscured the research question regarding mental illness diagnosis and desired social distance. The major difference between the experimental and control vignettes was the disclosure of personal information, specifically, being diagnosed with depression or being diagnosed with depression along with being prescribed antidepressant medications. If participants can be made to feel significantly closer to someone who discloses personal information, then this could have been a factor which impacted the comparison of desired social distance across the groups. That being said, a strength of this study was that the vignettes were identical except for the experimental information. Future research will be needed to determine if the group differences were due to the disclosure of personal information or depression diagnosis itself.

Another aspect of the vignette that should be addressed is the participant's *distance* from the portrayed character. Here we portrayed the vignette character as a friend of your friend whom the participant had never met before, making the character personally distance from the participant. Varying the vignette character's distance from the participant would be a manipulation which may produce different results. Although the current character reveals something personal which appears to make participants feel closer to that individual, this dynamic could vary with increasing closeness. Specifically, this association could become stronger or weaken as the vignette character has a closer relationship to the participant. In follow

up studies, researchers should use a variety of vignette characters whom are of varying distances and familiarities to the participant.

Finally, we used college students of a generally homogenous ethnic background. The practice of using college participants for social distance research is common, however, the counter-intuitiveness of our primary finding may be related to a cohort effect. College students may have different attitudes than found in the general population. These results specifically suggest that this sample of college students could have a more open attitude towards individuals with depression than the general public. These possible differences in opinions go against prior research that has not found support for a cohort effect regarding desired social distance and depression (Angermeyer & Matschinger, 2004; Pescosolido et al., 2010). Due to the lack of variation in age, we were unable to rule out of these results would be impact by generational variations.

Future Research

With the strengths and limitations of this study, several factors should be examined in future research. Researchers should explore in greater detail, the role of participant exposure to mental illness, the participant's connection with the characters in vignettes, the role of specific mental illness diagnoses in participants, and the age and diversity of the sample. By being attentive to participant exposure to mental illness, particularly those participants who have been diagnosed with a mental illness themselves, researchers may have a better chance identifying what the unexposed public believes about mental illness. Although many people in the world are currently living with depression (World Health Organization, 2015), it is important to identify

how people do not have a mental illness exposure interact with those who are diagnosed with a mental illness.

Identifying how people perceive and interact with those with a mental illness also relies on how the individual diagnosed with a mental illness is portrayed. This concerns both the closeness of the participant to the character in the vignette (mother compared to a friend) and the amount of personal disclosure in experimental and control vignettes. If vignette characters are portrayed as closer to the participants, one would expect that their reaction to a mental illness disclosure may be more dramatic than if the character is an acquaintance to them. Furthermore, the amount of personal disclosure should be monitored carefully, especially in the use of control vignettes.

Additionally, information should be collected pertaining to the specific mental illnesses that participants have been diagnosed with. Harboring this information makes it possible to analyze the possible roles of specific mental illness diagnoses on various constructs. Specifically, any future research on social dominance orientation should be careful to collect participant mental illness diagnoses. Social dominance orientation builds on an “us” versus “them” construct. In this case participants were exposed to vignettes describing an individual with depression. If a participant had been diagnosed with depression it would put the participant and the vignette character in the “us” group instead of separating them. Future research should pay particular attention to this.

Finally, future research should focus on recruiting a diverse sample of participants both in age and ethnicity. Although previous research has not found support for a cohort effect (Angermeyer & Matschinger, 2004; Pescosolido et al., 2010), this could be changing. By recruiting participants across a wide age range it would be possible to identify variations across

ages. Similarly, recruiting participants representatively across diverse ethnic backgrounds will allow for analysis examining how desired social distance scores vary across ethnic groups. Both efforts to expand the representativeness of the sample will provide a more accurate picture of desired social distance, and make the results more generalizable to the general population.

Conclusion

In sum, this study provides insight on social relationships and mental illness. We did not find support for the idea that anti-depressant medications would induce greater desired social distance, an important point for practitioners in clinical settings. We also found evidence for the importance of personal information disclosure in the willingness to associate with another individual. When an acquaintance reveals their depression diagnosis, people report feeling closer to that individual than when someone did not unveil such personal information. For individuals diagnosed with depression, multiple factors can impact someone's desired to connect with them. Two major factors, not having prior exposure to an individual with a mental illness and holding stigmatizing beliefs about depression was highly predictive of a greater apprehension of associating with an individual diagnosed with depression. Future research and interventions should target both depression related stigma and mental illness exposure, in order to have the most positive impact on social relationships if individuals diagnosed with depression.

References

- Adewuya, A., & Makanjuola, R. (2008). Social distance towards people with mental illness in southwestern Nigeria. *Australian & New Zealand Journal of Psychiatry*, *42*, 389-395. doi: 10.1080/00048670801961115
- Anderson, K., Jeon, A., Blenner, J., Wiener, R., & Hope, D. (2015). How people evaluate others with social anxiety disorder: A comparison to depression and general mental illness stigma. *American Journal of Orthopsychiatry*, *85*, 131-138. doi: 10.1037/ort0000046
- Ayazi, T., Lien, L., Eide, A., Shadar, E., & Hauff, E. (2014). Community attitudes and social distance towards the mentally ill in South Sudan: A survey from a post-conflict setting with no mental health services. *Social Psychiatry and Psychiatric Epidemiology*, *49*, 771-780. doi: 10.1007/s00127-013-0775-y
- Angermeyer, M., & Matschinger, H. (1996). The effect of personal experience with mental illness on attitudes towards individuals suffering from mental disorders. *Social Psychiatry & Psychiatry Epidemiology*, *31*, 321-326. doi: 10.1007/bf00783420
- Angermeyer, M., & Matschinger, H. (2003). The stigma of mental illness: Effects of labelling on public attitudes towards people with mental disorder. *Acta Psychiatrica Scandinavica*, *108*, 304-309. doi: 10.1034/j.1600-0447.2003.00150.x
- Angermeyer, M., & Matschinger, H. (2004). Public attitudes to people with depression: Have there been any changes over the last decade? *Journal of Affective Disorders*, *83*, 177-182. doi: 10.1016/j.jad.2004.08.001

- Angermeyer, M., Matschinger, H., & Corrigan, P. (2004). Familiarity with mental illness and social distance from people with schizophrenia and major depression: Testing a model using data from a representative population survey. *Schizophrenia Research, 69*, 175-182. doi: 10.1016/s0920-9964(03)00186-5
- Bell, S., Johns, R., & Chen, T. (2006). Pharmacy students' and graduates' attitudes towards people with schizophrenia and severe depression. *American Journal of Pharmaceutical Education, 70*, 1-6. doi: 10.5688/aj700477
- Bizer, G., Hart, J., & Jekogian, A. (2012). Belief in a just world and social dominance orientation: Evidence for a mediational pathway predicting negative attitudes and discrimination against individuals with mental illness. *Personality and individual differences, 52*, 428-432. doi: 10.1016/j.paid.2011.11.002
- Buchan, N., Johnson, E., & Croson, R. (2006). Let's get personal: An international examination of the influence of communication, culture and social distance on other regarding preferences. *Journal of Economic Behavior & Organization, 60*, 373-398.
- Buhler, A., & Karimi, R. (2008). Peer-level patient presenters decrease pharmacy students' social distance from patients with schizophrenia and clinical depression. *American Journal of Pharmaceutical Education, 72*, 1-7. doi: 10.5688/aj7205106
- Corrigan, P., Green, A., Lundin, R., Kubiak, M., & Penn, D. (2001). Familiarity with and social distance from people who have serious mental illness. *Psychiatric Services, 52*, 953-958. doi: 10.1176/appi.ps.52.7.953
- DeCapua, A., Berkowitz, D., & Boxer, D. (2006). Women talk revisited: Personal disclosures and alignment development. *Multilingua, 25*, 393-412. doi: 10.1515/MULTI.2006.021

- Duckitt, J., & Sibley, C. (2007). Right wing authoritarianism, social dominance orientation and the dimensions of generalized prejudice. *European Journal of Personality, 21*, 113-130. doi: 10.1002/per.614
- Eker, D. (1989). Attitudes toward mental illness: Recognition, desired social distance, expected burden and negative influence on mental health among Turkish freshmen. *Social Psychiatry and Psychiatric Epidemiology, 24*, 146-150. doi: 10.1007/BF01788024
- Griffiths, K., Christensen, H., Jorm, A., Evans, K., & Groves, C. (2004). Effect of web-based depression literacy and cognitive-behavioral therapy interventions on stigmatizing attitudes to depression. *The British Journal of Psychiatry, 185*, 342-349. doi: 10.1192/bjp.185.4.342
- Griffiths, K., Christensen, H., & Jorm, A. (2007). Predictors of depression stigma. *BMC Psychiatry, 8*, 1-12. doi: 10.1186/1471-244X-8-25
- Helgason, T., Tomasson, G., & Zoega, T. (2004). Antidepressants and public health in Iceland: Time series analysis of national data. *The British Journal of Psychiatry, 184*:2, 157-162. doi: 10.1192/bjp.184.2.157
- Kvaale, E., & Haslam, N. (2016). Motivational orientations and psychiatric stigma: Social motives influence how casual explanations relate to stigmatizing attitudes. *Personality and Individual Differences, 89*, 111-116. doi: 10.1016/j.paid.2015.09.044
- Lasalvia, A., Zoppei, S., Bortel, T., Bonetto, C., Cristofalo, D., Wahlbeck, K., Bacle, S., Audenhove, C., Weeghel, J., Reneses, B., Germanavicius, A., Economou, M., Lanfredi, M., Ando, S., Sartorius, N., Lopez-Ibor, J., Thornicroft, G., & ASPEN/INDIGO Study Group. Global pattern of experienced and anticipated discrimination reported by people

- with major depressive disorder: A cross sectional survey. *The Lancet*, 381:9860, 55-62.
doi: 101016/S0140-6736(12)61457-8
- Lauber, C., Nordt, C., Falcato, L., & Rossler, W. (2004). Factors influencing social distance toward people with mental illness. *Community Mental Health Journal*, 40, 265-274. doi: 10.1023/B:COMH.0000026999.87728.2d
- Liekens, S., Smits, T., Laekeman, G., & Foulon, V. (2012). Factors determining social distance towards people with depression among community pharmacists. *European Psychiatry*, 27, 528-535. doi: 10.1016/j.eurpsy.2010.12.009
- Link, B., Cullen, F., Frank, J., & Wozniak, J. (1987). The social rejection of former mental patients: Understanding why labels matter. *American Journal of Sociology*, 92, 1461-1500. doi: 10.1086/228672
- Link, B., Phelan, J., Bresnahan, M., Stueve, A., & Pescosolido, B. (1999). Public conceptions of mental illness: Labels, causes, dangerousness, and social distance. *American Journal of Health*, 89, 1328-1333. doi: 10.2105/ajph.89.9.13.28
- Link, B., & Phelan, J. (2001). Conceptualizing stigma. *Annual Review of Sociology*, 27, 363-385. doi: 10.1146/annurev.soc.27.1.363
- Link, B., Yang, L., Phelan, J., & Collins, P. (2004). Measuring mental illness stigma. *Schizophrenia Bulletin*, 30, 511-541.
- Marie, D., & Miles, B. (2008). Social distance and perceived dangerousness across four diagnostic categories of mental disorder. *Australian & New Zealand Journal of Psychiatry*, 42, 126-133. doi: 10.1080/00048670701787545

- National Center for Health Statistics. (2014). *Health, United States, 2014: With special feature on adults aged 55-64*. (DHHS Publication No. ADM 76-641496). Washington, DC: U.S. Government Printing Office.
- Ozmen, E., Ogel, K., Aker, T., Sagduyu, A., Tamar, D., Boratv, C. (2004). Public attitudes to depression in urban Turkey: The influence of perceptions and casual attributions on social distance towards individuals suffering from depression. *Social Psychiatry and Psychiatric Epidemiology*, *39*, 1010-1016. doi: 10.1007/s00127-004-0843-4
- Pescosolido, B., Martin, J., Long, S., Medina, T., Phelan, J., & Link, B. (2010). "A disease like any other"? A decade of change in public reactions to schizophrenia, depression, and alcohol dependence. *American Journal of Psychiatry*, *167*, 1321-1330. doi: 10.1176/appi.ajp.2010.09121743
- Phelan, J., & Basow, S. (2007). College students' attitudes toward mental illness: An examination of the stigma process. *Journal of Applied Social Psychology*, *37*, 2877-2902. doi: 10.1111/j.1559-1816.2007.00286.x
- Pratt, L., Brody, D., & Gu, Q. (2011). Antidepressant use in persons aged 12 and over: United States, 2005-2008. *NCHS Data Brief*, *76*, 1-8. Retrieved from <http://www.cdc.gov/nchs/data/databriefs/db76.pdf>
- Pratto, F., Sidanius, J., Stallworth, L., & Malle, B. (1994). Social dominance orientation: A personality variable predicting social and political attitudes. *Journal of Personality and Social Psychology*, *67*, 741-763. doi: 10.1037/0022-3514.67.4.741
- Schomerus, G., Matschinger, H., & Angermeyer, M. (2013). Continuum beliefs and stigmatizing attitudes towards persons with schizophrenia, depression, and alcohol dependence. *Psychiatry Research*, *209*, 665-669. doi: 10.1016/j.psychres.2013.02.006

- Sidanius, J., Pratto, F., & Mitchell, M. (1994). In-group identification, social dominance orientation, and differential intergroup social allocation. *The Journal of Social Psychology, 134*, 151-167. doi: 10.1080/00224545.1994.9711378
- Silton, N., Flannelly, K., Milstein, G., & Vaaler, M. (2011). Stigma in America: Has anything changed?: Impact of perceptions of mental illness and dangerousness on the desire for social distance: 1996 and 2006. *The Journal of Nervous and Mental Disease, 199*, 361-366. doi: 10.1097/nmd.0b013e31821cd112
- Web, A., Jacobs-Lawson, J., & Waddell, E. (2009). Older adult's perceptions of mentally ill older adults. *Aging & Mental Health, 13*, 838-846. doi: 10.1080/13607860903046586
- World Health Organization. (2015). *Depression*. Retrieved from <http://www.who.int/mediacentre/factsheets/fs369/en/>.

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Pennsylvania State University – Altoona
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HONORS & AWARDS

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2016 First Place Showing in Social Sciences Posters, Undergraduate Research Fair, Pennsylvania State University - Altoona: “Antidepressants, mental illness exposure, and social distance.”
2016 Phi Kappa Phi, Honor Society (invited)
2016 Undergraduate Research Conference Travel Grant, Pennsylvania State University - Altoona
2015 Undergraduate Research Grant, Pennsylvania State University - Altoona
2015 Schreyer Honors College Scholar, Pennsylvania State University
2015 Penn State Altoona Majors Scholarship
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PROFESSIONAL EMPLOYMENT

2015 **Research Assistant**, Fish Lab, Pennsylvania State University - Altoona
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PRESENTATIONS AT PROFESSIONAL MEETINGS/CONFERENCES

Leri, J.D., & Tornello, S. L. (April, 2016) Antidepressants, mental illness exposure, and social distance. Poster Presentation, Undergraduate Research Fair, Pennsylvania State University - Altoona.

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PROFESSIONAL AFFILIATIONS

American Psychological Association (APA)
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