Depression, or major depressive disorder (MDD), is the most common mental disorder within the United States of America (National Institute of Mental Health, 2019). In 2017 alone, around 17.3 million adults age 18 or older experienced at least one major depressive episode. Unfortunately, people with depression often experience stigma. People may develop stigmatizing attitudes by believing myths such as “All people with mental disorders are dangerous” or “People with mental illness can just ‘get over’ their ailment” (Anderson, Jeon, Blenner, Weiner, & Hope, 2015).

Stigmatization includes using stereotyping, prejudice, and discrimination, all of which degrade the individual who is being stigmatized (Hinshaw, 2005). Stigmatization of mental illness is expressed among medical workers and can lead to differentiated, lower quality care of patients with mental illness in a hospital setting (Cheng, Poon, Nguyen, Woodman, & Parker, 2013; Liekins et al., 2012; Minas, Zamzam, Midin, & Cohen, 2011) and self-stigmatization (Overton & Medina, 2008). Self-stigmatization in turn leads to more depressive thoughts and shaky self-confidence (Kao et al., 2016). Consequently, people with depression who tend to stigmatize their own condition have a higher likelihood of rejecting help from therapists or other treatment approaches (Campbell et al., 2016).

Social Distancing Individuals With Depression: The Impact of Symptom Severity

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ABSTRACT. People with depression experience stigma more than their nondepressed counterparts. Two studies focused on how symptom severity of depression affects stigmatization, operationalized as how people socially distance themselves from depressed individuals. In Study 1, college students and older adults (N=316) read vignettes of depressed individuals and rated how socially close they would like to be with that person. Vignettes ranged in depressive symptom severity. Using a repeated-measures within-subjects design, we found that vignettes with a higher number of depressive symptoms correlated with greater social distancing, F(2, 314) = 6.14, p = .002, η² = .020. This finding was consistent for both college students and older adults. Participants higher in depression were also more likely to socially distance themselves from other depressed individuals with many symptoms. In Study 2 (N = 110), we increased participant knowledge of depression to reduce social distancing with a video intervention. The control group and intervention group showed similar stigmatizing behavior. Future research should test for other mechanisms to reduce social distancing acknowledging the role of participants’ mental health.

Keywords: depression, social distancing, stereotypes, stigma, mental health literacy

Open Data and Open Materials badges earned for transparent research practices. Data are available at https://osf.io/4dau5/ and materials can be accessed at https://osf.io/6e7tb/, respectively.
Social Distancing
A common consequence of stigmatization is social distancing, in which people with mental illness are less socially desired than those who do not have a mental illness (Follmer & Jones, 2017; Lauber, Nordt, Falcato, & Rössler, 2004; Link, Cullen, Frank, & Wozniak, 1987; Wang, Smith, & Locke, 2014). Several factors contribute to social distancing (Lauber et al., 2004). For example, the perception of the depressed person being dangerous led representative samples to socially distance more frequently (Anderson et al., 2015; Liekens, Smiths, Laekeman, & Foulon, 2012; Marie & Miles, 2008). Other attitudes or perceptions that lead to social distancing is the supposed “cause” of the depression, with the belief that depression is caused by personal failure (Cleveland et al., 2013; Cook & Wang, 2011; von dem Knesebeck et al., 2013). Another factor leading to social distancing is exposure to depressed individuals; less exposure leads to more social distancing (Dietrich, Mergl, Rummel-Kluge, 2014). Furthermore, social norms and negative stereotypical beliefs about the mentally ill lead to further social distancing (Norman, Sorrentino, Windell, & Manchanda, 2008). Social distancing is especially deemed harmful for mentally ill individuals due to their need for social support from others (Davidson, Dowrick, & Gunn, 2016).

Social distancing is measured with a scale that includes common scenarios where participants report how they would approach that scenario (Link et al., 1987). The scale has been used in different settings such as in the assessment of attitudes toward children with autism (Thibodeau & Finley, 2016), and stigmatization toward depressed people of different ethnicities and socioeconomic statuses (von dem Knesebeck, Kofahl, & Makowski, 2017). Speerfork, Schomerus, Matschinger, and Angermeyer (2016) used the scale to assess how the public feels about certain mentally ill people receiving certain types of treatments.

The Role of Mental Health Literacy
Depression is more recognized than other mental illnesses such as social anxiety disorder, schizophrenia, or general psychosis (Coles et al., 2016; Melas, Tartani, Forser, Edhborg, & Forsell, 2013; Michel, Schimmelmann, & Schultz-Lutter, 2017). Research on the recognition of depression has focused on assessing public knowledge of the diagnosis, including how to seek help for depressive disorders (Hogg, 2011; Lauber, Nordt, Falcato, & Rössler, 2003; Swami, 2012). Some studies found that the average person has a clear and unbiased knowledge of depression (Hogg, 2011). Other studies examining depression literacy in specific locations such as residential care facilities and schools have shown that reducing stigmatization by increasing literacy also increases care workers’ capacity to help depressed individuals (Townsend et al., 2017; Winsor & Mclean, 2016).

Mental health literacy (MHL) is an important factor in social distancing (Lauber et al., 2004). Several studies have found evidence that the higher the level of MHL people hold, the less likely they are to socially distance themselves from depressed individuals (Dietrich et al., 2014; Svensson & Hansson, 2016; Swami, 2012; von dem Knesebeck et al., 2013). However, literacy can also increase distancing. People who use their mental health knowledge to identify that someone is ill are more likely to socially distance from that person (Lauber et al., 2004). We explored how MHL relates to social distancing.

Reducing Social Distancing
In addition to MHL, we also examined the role of age in social distancing. Past research has shown that participants socially distance themselves from mentally ill people. However, one may wonder if social distancing from depressed individuals varies with age. Findings on older adults’ attitudes toward mental health are mixed. In one study on generational differences in mental health attitudes, younger adults held more positive attitudes toward mental illness and seeking help for mental health issues (Currin, Hayslip, Schneider, & Kooken, 1998). In contrast, two other studies found that older adult participants had an overwhelmingly positive response to seeking professional help to improve their mental wellness (Currin, Hayslip, & Temple, 2011; Mackenzie Scott, Mather, Sareen, 2008).

Education can help reduce mental illness stigmatization by replacing mental illness myths with accurate conceptions (Arboleda-Flórez & Stuart, 2012). A meta-analysis by Yamaguchi, Mino, and Uddin (2011) identified three mental health interventions: an educational condition in which participants learned about mental illness, a condition in which participants watched an educational video, and a condition in which participants had direct contact with someone who has a mental illness. In general, improvement in mental health knowledge improved attitudes toward individuals with mental illness, reducing social distancing. Direct contact worked more effectively than the
other two education interventions for reducing social distancing. The researchers concluded that video interventions may need to be more explicit in their content such as adding more descriptive details on the presented characters’ personal backgrounds and life successes instead of overemphasizing symptomology.

Although many studies have examined the link between depression and social distancing, few have examined if symptom severity changes perceptions of depressed individuals. This is an identified gap in the contemporary mental health literature. There are a wide range of depressive disorders and symptoms. Some common symptoms of MDD are change in eating patterns, change in sleep pattern, hopelessness, anxiety, and feeling of emptiness (NIMH, 2018). We hypothesized that vignettes with higher numbers of depressive symptoms would be more socially distanced than individuals portrayed with fewer symptoms (Study 1). We also hypothesized that participants’ level of depression and MHL would influence social distancing (Study 1). Given the mixed findings regarding age in past research, we recruited samples widely varying in age to examine if older adults would stigmatize depressed individuals more given that, for many years in the past, depression was stigmatized. Finally, we hypothesized that an informative video intervention on depression would lower participants’ social distancing (Study 2).

**Study 1**

**Method**

**Participants.** Participants included consenting college students at a midsized Midwestern university ($n = 79$) and members of the local community recruited through the university’s Lifelong Learning Institute ($n = 237$). Psychology and human development students received course credit for participating in the research. In total, there were 316 participants (77% women and 23% men). Most of our sample was White (94%). Other ethnicities included Hispanic/Latino (3%), Asian/Pacific Islander, Native American, and other (3%). Ages ranged from 18 to 88 ($M = 55.66, SD = 22.81$).

**Measures.** We adapted vignettes from past studies presenting individuals with depression (Lauber et al., 2004; Swami, 2012; Wang et al., 2014). Two vignettes portrayed individuals with MDD. Two vignettes portrayed individuals with some depressive symptoms but who did not meet criteria for MDD. One vignette portrayed an individual with little to no major depressive symptoms, which acted as a control. Research assistants provided construct validity by correctly identifying which vignettes were categorized as high depressive symptoms, low depressive symptoms, and which had little to no symptoms. All study materials are provided at https://osf.io/6e7tb/.

We used the Social Distancing Scale (SDS; Link et al., 1987) to measure perceptions of the individuals presented in the vignettes, acting as the dependent variable. The SDS used a 5-point Likert scale, ranging from 1 (strongly agree) to 5 (strongly disagree). Participants answered seven questions on the scale relating to the person they just read about in the vignette. The SDS contained items that measured how socially desirable participants perceived the individuals in the vignettes. Scale scores for this sample showed strong reliability, Cronbach’s $\alpha = .849$.

We assessed knowledge and current attitudes toward mental illness using the Mental Health Literacy Scale (O’Connor & Casey, 2015). The first part of the scale had 20 items on a 5-point Likert scale ranging from 1 (strongly agree) to 5 (strongly disagree) with questions ranging from overall thoughts about mental illness to how comfortable participants would be asking for help for a mental illness. This first portion of the scale measured perceptions that participants had about mental illness in general. The second part of the scale contained 15 items and a 4-point Likert-type scale; this section measured participants’ knowledge of mental illness. An example of a question from this section is, “To what extent do you think it is likely that Personality Disorders are a category of mental illness?” with a rating from 1 (very likely) to 4 (very unlikely). Certain items were reverse scored. Scale scores for this sample showed strong reliability, Cronbach’s $\alpha = .87$.

We used the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) to assess the participants’ own levels of depression. The CES-D contains 20 self-report items on a 5-point Likert scale ranging from 1 (strongly agree) to 5 (strongly disagree). An example of an item on the CES-D is, “I felt depressed,” with a rating from 1 (not at all or less than 1 day last week) to 5 (nearly every day for two weeks). Scale scores for this sample showed strong reliability, Cronbach’s $\alpha = .94$.

**Procedure.** Student participants took the opportunity to sign up for the study using the departmental participant pool. Participants received credit to satisfy a course research requirement. We invited community member participants...
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via e-mail. Community members were part of a campus Lifelong Learning Institute.

In the online survey created with Qualtrics software, participants first read the consent form and gave consent before starting the survey. Participants answered demographic questions regarding age, ethnicity, sex, and year in school. Next, participants read all five vignettes (with order counterbalanced) and answered SDS items after each. Then, participants answered general questions about their personal encounters with depression and the Mental Health Literacy Scale (MHLS). Finally, we debriefed the participants and provided a list of possible resources for those who are personally impacted by depression and/or mental illness in general.

Results

We averaged the two high symptom and two low symptom vignettes to create a single score for each. We then used a repeated-measures Analysis of Covariance with vignette as the within-factor variable (high, low, no symptoms); social distancing as the dependent variable; and age, MHL, and CES-D as covariates. There was a significant main effect of vignette, Hotelling’s Trace $F(2, 248) = 5.17, p = .010, \eta^2 = .040$. Participants socially distanced the most from people with highest depressive symptoms ($M = 10.27, SD = 0.77$), followed by people with low symptoms ($M = 9.44, SD = 0.70$) and people in the control vignette ($M = 9.21, SD = 0.77$). Simple within-subjects contrasts showed the strongest effects for Level 1 versus Level 3 contrasts, $F(1, 249) = 9.63, p = .002, \eta^2 = .037$. Level 2 versus Level 3 contrasts were not significant, $F(1, 249) = 3.61, p = .059, \eta^2 = .014$. Given that not all participants completed all measures, the sample size dropped with all variables in the equation. We conducted a paired-samples test on only social distancing. Results showed that all pairs were significantly different from each other, high and control, $t(314) = 25.66, p < .001$, high and low, $t(313) = 21.54, p < .001$, and low and control, $t(313) = 5.38, p < .001$.

Participants’ level of depression was a significant covariate of social distance ratings, Hotelling’s Trace $F(2, 248) = 4.66, p = .010, \eta^2 = .036$. An examination of bivariate covariations showed that participants with higher scores on the CES-D reported lower social distancing of targets in vignettes with high symptoms, $r(299) = -.18, p = .001$. Mental health literacy, $F(2, 248) = 0.35, \pi = .705, \eta^2 = .003$, and age, $F(2, 248) = 1.73, p = .179, \eta^2 = .014$, were not significant covariates. An analysis controlling for number of individuals with major depression known by participants as a covariant was also not significant, $F(2, 240) = 0.80, p = .450, \eta^2 = .007$.

Discussion

As hypothesized, participants showed stronger social distancing behaviors toward people who displayed more depressive symptoms. Social distancing behaviors toward the control vignette were lowest. We note that the effect sizes were not large. The participants’ level of depression affected their social distancing decisions, suggesting that personal experiences with the mental illness influenced views of others with the illness. Instead of wanting to provide support to targets by reducing social distancing, our results suggest that the more severe symptoms alerted participants to the mental illness and increased self-reported distancing. Knowing more about mental illness did not seem to predict social distancing perhaps because depression is a well-known mental illness and there was not enough variance in MHL to influence perceptions.

Counter to our hypothesis, participant age was not a significant factor. It is possible that widespread public media campaigns to raise awareness of depression and mental illness apply equally to individuals across the lifespan.

Given the strong differences found in viewing different vignettes, we next wanted to see if we could reduce social distancing. We hypothesized that an intervention to change the level of participants’ knowledge about depression may be salient enough to reduce social distancing behavior. In Study 2, we used a commonly accessible video as an intervention to increase knowledge about depression and tested if it would decrease social distancing.

Study 2

Method

Participants. Participants included consenting college students ($N = 99, 89\%$ women, $11\%$ men) in psychology and human development classes. Students received course credit for participation to satisfy a research requirement. Most participants were White ($87\%$). Other ethnicities were Asian/Pacific Islanders ($8\%$), African American ($2\%$), Hispanic/Latino ($2\%$), and other ($2\%$). Participants’ ages ranged from 18 to 56 ($M = 20.30, SD = 5.01$).

Measures. Participants watched one of two videos, accessed on YouTube. The intervention featured a video entitled “I Had a Black Dog; His Name Was Depression” published by the World
Health Organization (2012). The video describes depression as a black dog that debilitates the main character’s life. The video provides information about therapy and treatment, and mentions that depression can make people with the illness worried that they may experience stigma for having depression. The video also mentions that having depression can make people feel isolated from everything and everyone. Participants in the control condition watched a nature video entitled “Anatomy of a Hunt: Speed, Strategy, and Survival” published by Nature Video (2018). This video was about the speed and anatomy of cheetahs. The two videos were similar in length, each of them being a little over four minutes. Participants rated the video on enjoyable, informational, well-made, sad, eye-opening, engaging, colorful, boring, long, and inaccurate, using a 5-point Likert scale ranging from 1 (strongly agree) to (strongly disagree).

We used two of the adapted vignettes from Study 1 to both reduce the length of the study and fatigue, and utilize the two extreme ends of the range of symptom options. We used one high symptom (MDD) scenario and the control vignette. Participants completed the SDS (Link et al., 1987) for each vignette. They also completed the Mental Health Literacy Scale (O’Connor & Casey, 2015) and the CES-D Scale (Radloff, 1977).

Procedure. As in the previous study, college participants signed up for the study for research credit and completed the study online. We first asked participants to read the consent form and give consent before starting the survey. Participants answered demographic questions regarding age, ethnicity, sex, and year in school and were randomly assigned to watch the intervention video or nature video. Participants then read the vignettes and answered the SDS based on the vignettes they just read. Participants answered general questions about their personal encounters with depression and completed the MHLS and CES-D. Finally, we debriefed the participants with the purpose of the study. The debriefing also included a list of possible resources for those who are personally impacted by depression and/or mental illness in general.

Results
As a manipulation check, we first analyzed ratings of the videos across conditions using a multivariate Analysis of Variance. The multivariate test, Hotelling’s Trace for condition was significant, $F(10, 86) = 4.89, p < .001, \eta^2 = .36$. Tests of between-subjects effects showed that the experimental group rated the video less enjoyable ($p = .013, \eta^2 = .06$), but more eye-opening ($p < .001, \eta^2 = .14$), and sad ($p < .001, \eta^2 = .22$). Participants’ CESD and MHLS scores did not vary across conditions suggesting the video intervention did not influence the reporting of these scores.

We tested the effectiveness of our intervention using a repeated-measures Analysis of Covariance with vignette as the within-subjects variables, condition as the between subjects variable, and participants’ MHLS and CESD scores as covariates. The intervention did not significantly influence social distancing. Scores on social distancing did not vary across conditions, Hotelling’s Trace $F(1, 95) = 1.09, p = .298, \eta^2 = .01$. Similar to Study 1, we found a main effect for vignette with participants distancing more from the high symptom vignette than the low symptom vignette, $F(1, 95) = 10.25, p = .002, \eta^2 = .10$. Only MHLS acted as a significant covariate, $F(1, 95) = 10.32, p = .002, \eta^2 = .10$. Participants with higher MHLS reported less social distancing. CES-D was not a significant covariate, $F(10, 86) = 1.43, p = .235, \eta^2 = .02$.

General Discussion
Our results showed that individuals with more depressive symptoms are more likely to experience social distancing than those who have fewer depressive symptoms. This finding stayed consistent within the two studies. Our findings align with numerous other studies that have found that individuals with mental illness are socially distanced and stigmatized (Follmer & Jones, 2017; Lauber et al., 2004; Link et al., 1987; Wang et al., 2014).

In line with previous studies, we found partial support for the hypothesis that participants’ own level of depression (Study 1) and MHL (Study 2) affects social distancing behaviors toward other depressed individuals. The higher the depression in participants, the less they socially distanced themselves from highly depressed individuals in the first study. The higher the MHL, the less likely they distanced themselves in the second study. It is likely that a person’s knowledge and feelings of relatedness to a target can shape that person’s worldview regarding the mentally ill. Individuals higher in depression may better understand how lonely and isolating depression is, which reduced social distancing. Whether participants knew someone with depression personally did not significantly affect social distancing as it has in other studies (Dietrich et al., 2014).

Age was not a significant predictor of outcomes.
The general level of stigmatization was similar across ages. We predicted that members of an older generation would show more stigmatization toward depressed individuals. However, age was not a significant covariate.

The video intervention did not decrease social distancing. This is consistent with past findings that video interventions can be limited in effectiveness (Yamaguchi et al., 2011). Although a video intervention is an easy way to convey information to large numbers of people, it is possible that an individual’s past exposure and knowledge of mental illness is relatively resistant to change. Watching a video provides a buffer between the subject matter and the person, especially when the video is animated. Creating and testing the effects of a video featuring live action and people similar to the participants may be more likely to create change. Research has shown that there are more effective ways of breaking stigma such as direct contact with mentally ill individuals (Yamaguchi et al., 2011), and creating videos to more closely mirror such experiences may be better investments of time for the future.

Our study has two major limitations. Our samples did not contain much variance in gender or ethnicity, which limits the generalizability of our findings. The primary ethnicity of participants in both studies was White. Also, our samples included a much higher proportion of women than men. Second, we did not utilize all three levels of vignettes in Study 2, limiting levels of contrast. We did not test the effect of the video on low depression symptoms, only high, and the “no symptom” control.

There are several implications for future research. First, this study should be replicated to firmly establish the findings. Also, more studies should be conducted that look at the symptom severity of depression and social distancing. Many studies compare the stigmatization of different disorders, but there is a gap in literature that focuses on symptom severity. Future researchers could replicate the format of this study, focusing on symptom severity, but using different dependent variables. Although social distancing is a common stigmatization measurement, there are other scales that would broaden the understanding of attitudes toward mentally ill individuals. Good candidates for future work include providing social support or the measurement of other prosocial behaviors such as sharing coping skills.

Finally, future research directions could build off the current research by focusing on other mental disorders. Perhaps there are different degrees of stigmatization based on the symptom severity of OCD or ADHD. Perhaps there is a difference between the social distancing of individuals with major depression and those with severe schizophrenia. Future research should examine the difference between disorders that have a strong impact on social functioning and social behavior (e.g., Autism spectrum) with disorders that have a lesser detrimental impact on social functioning (e.g., some anxiety disorders).

Although we did establish a clear link between social distancing and symptoms of depression, we note that distancing did not consistently vary with MHL, participants’ own depression, or age. Study 1 suggests that experiencing symptoms of depression may influence how people see others with depression, and Study 2 suggests that MHL is associated with social distancing behaviors toward depressed individuals. The challenge for researchers is to determine the best way to reduce negative attitudes toward individuals experiencing mental illness.

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