Stigma and Health

The Effects of Military Status and Gender on Public Stigma Toward Posttraumatic Stress Disorder

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CITATION

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People’s negative societal perceptions, otherwise known as public stigma, serve as a barrier to help-seeking behavior for military service members and veterans with posttraumatic stress disorder (PTSD). Relatively little experimental research has been conducted to examine public perceptions of stigma regarding PTSD in male and female military service members. Participants (N = 252) were randomly assigned to one of four variations containing a manipulated photograph of either a man or a woman in military or civilian clothing accompanied by a vignette describing the person’s PTSD symptoms and diagnosis. The dependent measure of stigmatizing attitudes toward PTSD was adapted from the Attribution Questionnaire (AQ-27). Confirmatory factor analysis supported the 9-factor measurement structure of the AQ-27 using the current data. A multivariate analysis of variance was performed on the 9 attribution subscales. The main effects for military status showed that participants perceived the person in military uniform to be more dangerous, fear-inducing, and needing to be segregated than the civilian. No main effect for gender was found on stigmatizing attitudes. No interaction effect of the manipulated military status and gender emerged. Main effects for the nonexperimental factor of PTSD contact revealed that participants who indicated knowing someone with PTSD endorsed fewer stigmatizing attitudes toward those with PTSD. These findings help to understand people’s stigmatizing attitudes toward individuals with PTSD and serve to inform interventions aimed at combating stigma.

Keywords: public stigma, posttraumatic stress disorder, PTSD, military, civilian

For individuals with posttraumatic stress disorder (PTSD), a primary barrier to mental health treatment seeking is stigma (Britt et al., 2008; Greene-Shortridge, Britt, & Castro, 2007). Military personnel are less likely to follow through with a mental health referral than a medical referral (Britt, 2000), and only 23–40% of soldiers diagnosed with a mental health problem sought mental health services (Hoge et al., 2004). Military personnel experiencing stigma reported more barriers to care than did civilian college students, and these barriers were strongly predictive of further mental illness symptomatology (Britt et al., 2008). Given the connection between stigma and help-seeking behaviors of individuals with PTSD, the current experiment was conducted to understand the impact of military status and gender on stigmatizing attitudes held by the general public. This study is the first experimental manipulation of military status via uniform on outcomes of public stigma, allowing for the examination of people’s stigma perceptions toward someone serving in the military versus being a civilian. In addition, the present investigation explored the utility of a widely used measure of public stigma, the Attributions Questionnaire (AQ-27; Corrigan, Markowitz, Watson, Rowan, & Kubik, 2003), in the context of assessing perceptions toward PTSD.

Mental Illness and Public Stigma

The construct of stigma includes multiple subtypes, one of which is public stigma (Corrigan, 2004; Pryor & Reeder, 2011). Public stigma describes the general population’s perception that someone is socially unacceptable because he or she belongs to a certain group or embodies a certain characteristic (e.g., are diagnosed with a mental illness or seek mental health services; Vogel, Wade, & Haake, 2006). Public stigma can result in negative behavioral and emotional reactions to the stigmatized person or group (Weiner, Perry, & Magnusson, 1988), which are then enacted in overt (e.g., intentional avoidance of a person or group) or covert (e.g., nonverbal expressions of discomfort) ways (Hebl, Tickle, & Heatherton, 2000; Herek, 1999). Public stigma has been evidenced to exhibit deleterious effects for stigmatized individuals in the general population, such as fewer job opportunities, difficulties obtaining safe housing, and reduced access to resources valued by society (Corrigan & Watson, 2002; Farina, Fisher, & Fischer, 1992; Link, 1982; Link & Phelan, 2001; Page, 1995; Weiner et al., 1988). Although it is widely recognized that former military personnel often struggle to obtain job and housing opportunities (e.g., Ostovary & Daprich, 2011), it remains unclear what role public stigma plays in perpetuating these issues.

Public stigma also contributes to self-stigma, or the social and psychological effects of being stigmatized, in three specific ways:
(a) through enacted stigma, or when a stigmatized person is treated poorly; (b) through felt stigma, or the stigmatized person’s anticipation of being treated poorly; or (c) through internalized stigma, or the negative self-image and decreased self-esteem that result when a stigmatized person internalizes the negative beliefs about his or her group or condition (Herek, 2007). Self-stigma has been linked to poor outcomes, including but not limited to lower self-esteem, treatment seeking, and help-seeking behaviors (Blais, Renshaw, & Jakupcak, 2014; Vogel, Wade, & Hackler, 2007). Understanding the prevalence, content, and functionality of public stigma is therefore important for understanding self-stigma and mitigating the negative effects of both.

Individuals with mental disorders are often considered by the public to be violent, incompetent, and responsible for the development of their illnesses (Ben-Zeev, Young, & Corrigan, 2010). Attribution theory (Corrigan, 2000; Weiner et al., 1988) has been applied to understand the public stigma of mental health problems (Corrigan et al., 2003). In an attribution theory framework, people assign attributions for others’ development of mental illnesses that may foster stigmatizing attitudes toward a disorder. If person’s disorder is perceived to be under personal control, beliefs about responsibility result in anger or criticism. If a person’s disorder is perceived to be outside of personal control, beliefs about lack of responsibility will result in pitying or helping behavior (Corrigan, 2000).

Several studies support the application of attribution theory to the formulation of public stigma surrounding mental illness. For example, Weiner et al. (1988) found that people viewed others with mental health difficulties as more personally responsible for the development of their disorders than those with physical difficulties. Weiner and colleagues (1988) discovered that participants endorsed lower levels of pity and higher levels of anger toward individuals identified as having a mental illness, especially when the illness was viewed as under the individual’s control. Similarly, Crandall and Moriarty (1995) determined that mental health disorders, compared to physical disorders, were viewed as more controllable. Link, Phelan, Bresnahan, Stueve, and Pescosolido (1999) asked participants to read vignettes depicting targets with schizophrenia, major depressive disorder, worries, or alcohol and drug dependence and to rate these targeted individuals on causes of mental illness, dangerousness, and desirable social distance. Participants desired the most interpersonal distance from the person in the cocaine-dependent vignette, followed by the person with alcohol dependence, then schizophrenia, then major depression, and, finally, worries. Findings indicate greater stigmatization surrounding those with controllable (stance dependence) versus uncontrollable (schizophrenia) or more benign problems (worrying).

Jones and colleagues (1984) propose common dimensions among stigmatizing conditions such as mental illness. Two of these dimensions are (a) origin, or the circumstances under which the condition developed and whether the individual was responsible for the development of his or her condition, and (b) peril, or the belief that the stigmatizing condition is dangerous (Jones et al., 1984). Corrigan and colleagues (2003) expanded upon this work, proposing that perceived dangerousness is associated with increased desire for social distance from those with mental illnesses as well as beliefs that they should be separated from society (Link et al., 1999). This idea, known as the danger appraisal hypothesis, posits that helping and rejecting behaviors operate through fear beliefs concerning the perceived dangerousness of the target individual. Individuals perceived as dangerous are considered more responsible for their mental illness (Corrigan et al., 2003). Perceptions of personal responsibility in turn lead to greater stigmatization and discriminatory responses, such as the desire to avoid them, segregate from them, or withhold help from them (Corrigan, 2000; Corrigan et al., 1999, 2003; Corrigan, Markowitz, & Watson, 2004).

Applying the attribution theory framework and their danger appraisal hypothesis, Corrigan et al. (Corrigan, Edwards, Green, Diwan, & Penn, 2001; Corrigan, Green, Lundin, Kubiak, & Penn, 2001; Corrigan et al., 2003) developed the Attribution Questionnaire (AQ-27) to assess underlying nine constructs found to contribute to stigma: Blame, Anger, Pity, Help, Dangerousness, Fear, Avoidance Segregation, and Coercion of the individual with the mental illness. Previous researchers have utilized the AQ-27 to examine public stigma toward mental illnesses such as schizophrenia and substance use disorders, but this scale has not been examined in the context of PTSD.

PTSD and Public Stigma

PTSD is a unique mental health disorder in that it only develops after experiencing or witnessing a potentially life-threatening event. Although neurobiological and genetic risk factors have been identified (Southwick, Rasmusson, Barron, & Arnsten, 2005), the public may perceive PTSD as a disorder that is under someone’s control. Given the greater stigmatization of perceived “controllable” problems relative to “uncontrollable” problems, PTSD may be associated with greater levels of public stigma than other mental or physical health problems perceived as less controllable.

Military status is particularly relevant when considering public stigma of PTSD, as service members are at increased risk of developing PTSD (Hoge, Auchterlonie, & Milliken, 2006). A qualitative analysis of news articles of Iraq and Afghanistan veterans found that the most common theme used to depict veterans was that of being broken and disoriented, despite the fact that the majority of returning veterans do not suffer from any physical or psychiatric disabilities (Wilbura, 2016). For example, veterans were frequently portrayed as using an “empty shell” metaphor and as struggling to reintegrate back into civilian life. It has yet to be determined if these portrayals are accurate representations of public perceptions, as limited research has investigated public attitudes toward military personnel and veterans.

Public stigma toward PTSD, and specifically military personnel diagnosed with PTSD, has not been widely researched. Hipes and Gemoets (2019) compared people’s perceptions of an individual with PTSD from a car accident with their perceptions of an individual with war-related PTSD. Participants perceived the individual with war-related PTSD to be more dangerous and incompetent than the person with PTSD from the car accident, but as more assertive than the car accident victim and individuals with other forms of mental illness (e.g., schizophrenia). It cannot be determined whether these observed differences are attributable to the traumatic event (car accident vs. war) or the perception of military status. Participants may have assumed the individual with war-related PTSD to be military affiliated while they did not assume the same for the car accident victim. Given the increase in stigmatizing attitudes toward “controllable” disorders, service
members or veterans may be perceived as responsible for their PTSD and face more stigma for their choice to join the military. Further investigations of public stigma toward military personnel with PTSD, and how it compares to nonmilitary PTSD, are warranted.

**Gender and Public Stigma**

Traditional male gender roles emphasize being in control, stoic, and independent (Hammen & Peters, 1977). As such, the public might perceive men with a mental illness more negatively. Additionally, societal norms allow for greater acceptance of emotional expression from females compared to males (Fabes & Martin, 1991; Grossman & Wood, 1993). A meta-analysis of social reactions to victims’ disclosures of traumatic experiences and PTSD (Ullman & Filipas, 2005) revealed differences in social support for men and women with PTSD. Women were much more likely than men to receive positive reactions and support after disclosure. These findings suggest discrepancies in public stigma toward men and women with PTSD.

Caldwell and Lauderdale (2018) investigated the experimental effects of gender on public stigma specifically toward military personnel with PTSD. After viewing videos of men or women describing their symptoms of combat-related PTSD, participants completed the AQ-27. The male veteran with combat-related PTSD was perceived as more dangerous and fear-provoking than the female veteran with combat-related PTSD, and participants reported a greater desire to segregate and coerce the male combat veteran into treatment compared to the female veteran. These results aligned with prior research that found greater stigma for men with mental illness (Jorm & Griffiths, 2008; Reavley & Jorm, 2011). Of note, Caldwell and Lauderdale’s study was conducted with college students at a Midwestern university whose mean age was 20 years, and it is unclear if findings generalize to a more representative national sample.

**Present Study**

Although research has found that service members and veterans with PTSD exhibit high rates of self-stigma (Greene-Shortridge et al., 2007), less is known about public stigma surrounding PTSD. Caldwell and Lauderdale (2018) examined gender differences in public stigma toward individuals with combat-related PTSD, but comparisons between military-related PTSD and PTSD due to other traumas have yet to be made. Stigma toward service members and veterans may be compounded by public attitudes toward the military, as seen in the negative portrayals of and backlash against soldiers returning home after the Vietnam War (Friedman, 2005). The present study sought to address these gaps in the literature by examining the effect of military status and gender on public stigma beliefs. The current study also applied confirmatory factor analysis (CFA) to scrutinize the factor structure of the AQ-27 in the context of measuring public stigma toward PTSD.

In this study, we hypothesized significant main effects of gender and military status on stigmatizing attitudes as measured by the nine subscales of the AQ-27. We hypothesized that participants assigned to the military (compared to civilian) and male (compared to female) variations would endorse higher levels of stigmatizing attitudes on the AQ-27 subscales. An additional nonexperimental analysis assessed whether participants who knew someone with PTSD compared to those without such acquaintances differed in their responses on the AQ-27. Thus, participants who reported contact with someone with PTSD were hypothesized to score significantly lower on the AQ-27 subscales, consistent with prior research indicating that familiarity with people with mental health problems is associated with lower endorsement of stigmatizing attitudes (Corrigan, Edwards, et al., 2001; Corrigan, Green, et al., 2001). Lastly, the original nine-factor structure of the AQ-27 was hypothesized to fit the underlying data in measuring public stigma toward PTSD.

**Method**

**Participants**

This study has been approved by the Institutional Review Board for Human Subjects Research. In total, 254 participants were recruited online through Amazon’s Mechanical Turk (an online crowdsourcing site) and were nominally compensated for participation. Two participants did not respond to all items and therefore were excluded, yielding a total of 252 participants for the final analyses.

The final sample consisted of 61% females and had a mean age of 36.06 years (SD = 12.53). Seventy-three percent of the participants self-identified as White (n = 185), 10% as Asian (n = 25), 8% as Black (n = 21), and 8% as Latino (n = 21). Approximately 40% (n = 101) indicated knowing someone with PTSD and 60% (n = 151) did not.

**Design**

Participants were randomized across the variations of two manipulated independent variables: gender (male or female) and clothing (civilian or military uniform). Participants were assigned a photograph of a male or female in either civilian clothing or a military uniform and a corresponding vignette describing the individual’s PTSD symptoms. Following, participants completed the instruments including the AQ-27 (Corrigan et al., 2003) and questions regarding the participant’s contact with someone diagnosed with PTSD.

**Stimulus Material**

**Photograph manipulations.** Participants were assigned a photograph corresponding to the experimental variation. The male and female faces chosen were deemed by the researchers to be similar in age, level of attractiveness, race, and facial expression. The faces in the two female variations were identical, as were the faces in the two male variations. Each image was measured to ensure equal proportions and standardization across the experimental variations. Using Microsoft Paint, the faces were transposed onto bodies in either military uniform or civilian clothing. Clothing was identical in both gender variations apart from slimmer proportions used in the female variations to create more realistic images. Photographs were presented along with the vignette to orient participants to the military versus civilian variation as well as the gender of the individual described. Additionally, the inclusion of photographs was meant to ensure the salience of the
vignette, as photographs have been shown to increase participant attention toward accompanying text information (Houts, Doak, Doak, & Loscalzo, 2006). The decision to utilize a photograph along with a description of the individual was an attempt to eliminate the priming of media biases toward service members, who are often portrayed as violent or dangerous. The neutral photograph and description instead of a media depiction allows for the solicitation of attributions and attitudes from participants free from any media bias.

**Vignette.** The vignette utilized in this study was adapted from an original vignette used by Corrigan and colleagues (2003) describing a man diagnosed with schizophrenia. We modified the vignette to describe an individual with PTSD and matched the gendered pronouns in the text to the gender of the person in the photograph. A gender-neutral name was chosen so that the name could remain the same regardless of the gender variation. The vignette read:

Sammy has been diagnosed with Posttraumatic Stress Disorder (PTSD). Since experiencing a traumatic event, [he/she] has a difficult time falling asleep each night and often wakes up from nightmares about the event. About twice per week, Sammy has flashbacks of [his/her] traumatic experience, during which [he/she] feels like [he/she] is re-experiencing the event and to those around [him/her], appears to be spacing out. [He/She] is very alert and always seems to be checking [his/her] surroundings. For instance, when Sammy goes to a restaurant, [he/she] likes to sit with [his/her] back against a wall so that [he/she] can observe the entire restaurant at once. [He/she] also finds it more difficult to concentrate than [he/she] did before the traumatic event. Sammy works a 9-to-5 job and spends most of [his/her] evenings at home with [his/her] two dogs.

**Measures**

**AQ-27.** The AQ-27 (Corrigan et al., 2003) is a 27-item self-report questionnaire that measures stigma toward people diagnosed with a mental illness. Items are scored using a 9-point Likert scale in which participants rate their agreement with statements from 1 (not at all) to 9 (very much). Strong internal consistency, test-retest reliability, and convergent validity with other stigma scales have been previously evidenced (Brown, 2008; Corrigan et al., 2003). The items were modified to match the name and pronouns used in the modified vignette. Responses were reverse scored, if necessary, so that higher scores indicated higher levels of stigmatizing attitudes. Composites for each of the nine subscales were computed by summing the scores of the three items that measured each subscale. The Blame subscale refers to how responsible a person is for controlling his or her mental illness ($\alpha = .76$; e.g., “I would think that it was Sammy’s own fault that [he/she] is in the present condition”). Feelings of irritation toward an individual with PTSD are measured by the Anger subscale ($\alpha = .87$; e.g., “I would feel aggravated by Sammy”). The Pity subscale measures feelings of sympathy toward a person with mental illness ($\alpha = .75$; e.g., “I would feel pity for Sammy”). The Help subscale captures willingness to assist an individual with mental illness ($\alpha = .87$, e.g., “How likely is it that you would help Sammy?”). The Dangerousness construct measures feelings that a person with mental illness poses a threat to the well-being of others ($\alpha = .89$; e.g., “How dangerous would you feel Sammy is?”). The extent that raters endorsed feeling afraid of persons with mental illness is represented by the Fear subscale ($\alpha = .90$; e.g., “I would feel unsafe around Sammy”). The Avoidance subscale assesses the willingness to work or live near a person with mental illness ($\alpha = .82$; e.g., “If I were a landlord, I probably would rent an apartment to Sammy”). The Segregation factor measures the perspective that a person with mental illness should be separated from the rest of society ($\alpha = .87$; e.g., “I think it would be best for Sammy’s community if [he/she] were put away in a psychiatric hospital”). The Coercion construct measures attitudes that a person with mental illness should be forced into treatment ($\alpha = .65$; e.g., “If I were in charge of Sammy’s treatment, I would require [him/her] to take [his/her] medication”).

**PTSD contact.** Participants indicated whether they knew anyone with PTSD by selecting either “yes” or “no.”

**Data Analysis**

First, the measurement validity of the subscales of the AQ-27 as applied to attitudes toward PTSD in this sample was examined with CFA. The model $\chi^2$, comparative fit index (CFI), the Tucker Lewis index (TLI) and the root mean-square error of approximation (RMSEA) were fit indices used to assess the model fit. Next, a factorial multivariate analysis of variance (MANOVA) was conducted to assess (a) the main effect of the gender of the person in the photo, (b) the main effect of military status, (c) the main effect of participant contact with someone diagnosed with PTSD, (d) the interaction effect of gender and military status, (e) the interaction effect of gender and PTSD contact, (f) the interaction effect of military status and PTSD contact, and (g) the interaction effect of gender, military status, and PTSD contact. If one of the aforementioned MANOVA effects was statistically significant, this was followed by analyses of variance (ANOVAs) to decompose the effect. The nine subscales of the AQ-27 served as the dependent measures in all analyses.

**Results**

**CFA of the AQ-27**

Table 1 provides the bivariate correlations between the subscales of the AQ-27. The model fit of the 27 items as embodied by the hypothesized nine-factor structure was borderline acceptable: $\chi^2 = 735.92, df = 288, p < .001$; model $\chi^2/df$ ratio = 2.62; CFI = .91; TLI = .89; RMSEA = .08, 90% CI [.07, .09]. All items attained factor loadings of .50 or higher with the exception of Item 5 (e.g., “If I were in charge of Sammy’s treatment, I would require [him/her] to take [his/her] medication”), which possessed a poor factor loading of .27 on the coercion construct. After removing this item, the confirmatory factor model of the AQ-27 was reestimated. The fit of the modified nine-factor model was satisfactory: $\chi^2 = 660.37, df = 263, p < .001$; $\chi^2/df$ ratio = 2.51; CFI = .92; TLI = .90; RMSEA = .08, 90% CI [.07, .09] (see Figure 1). The internal consistency of the coercion construct also improved from .65 to .68 after the removal of the poor loading item.

**Gender and Military Status Manipulations and PTSD Contact on Attributions**

**MANOVA.** Following the removal of the item from the coercion construct and the factor structure confirmation of the nine
effects, a three-way between-subjects MANOVA was performed across the set of nine attribution subscales. Following the guidelines of Field (2018), Pillai’s trace test statistic was followed to the greatest power and robustness. Manipulated gender (male or female) of the person in the photo, manipulated military status (military or civilian) of the person in the photo, and the nonexperimental factor of participant contact with someone diagnosed with PTSD served as the independent variables. The multivariate factors, a three-way between-subjects MANOVA was performed (9, 236) to explain the set of nine attribution questionnaire subscales, V = .07, F(9, 236) = 1.95, p = .046. Contact with someone diagnosed with PTSD significantly explained the set of nine attribution questionnaire subscales, V = .10, F(9, 236) = 2.82, p = .004. No multivariate interaction effect between gender and military status was observed, V = .01, F(9, 240) = 0.38, p = .943. No multivariate interaction effect was discovered between gender and PTSD contact, V = .03, F(9, 236) = 0.86, p = .563. Additionally, no multivariate interaction effect was observed between military status and PTSD contact, V = .04, F(9, 236) = 1.03, p = .414. Finally, no multivariate interaction effect was found involving gender, military status, and PTSD contact, V = .01, F(9, 236) = 0.33, p = .965.

ANOVA. Next, the ANOVAs examining the effect of the military status manipulation on each of the nine subscales of the attribution questionnaire were evaluated. The results showed the persons in military uniform were rated more highly on perceived dangerousness (M = 8.78, SD = 5.80) than those in civilian clothing (M = 7.01, SD = 4.69), F(1, 250) = 7.16, p = .008, d = 0.34. Participants also reported the persons in military uniform elicited more fear (M = 8.34, SD = 5.56) than civilians (M = 6.63, SD = 4.92), F(1, 250) = 6.65, p = .010, d = 0.32. Finally, higher scores were reported on the segregation subscale for the military clothing variation (M = 7.94, SD = 5.59) compared to the civilian clothing variation (M = 6.50, SD = 5.00), F(1, 250) = 4.59, p = .033, d = 0.27.

ANOVA were also conducted to examine the effect of PTSD contact on each of the nine attribution questionnaire subscales. Results indicated that participants who knew someone with PTSD (M = 20.94, SD = 4.37) expressed more pity than participants who did not (M = 19.46, SD = 5.41), F(1, 250) = 5.24, p = .023, d = 0.30; participants who knew someone with PTSD (M = 7.36, SD = 4.36) were more willing to offer help than those who did not know anyone with PTSD (M = 10.32, SD = 5.74), F(1, 250) = 19.41, p < .001, d = 0.58; and participants who knew someone with PTSD (M = 9.63, SD = 5.31) also were less likely to avoid people with PTSD than their counterparts (M = 11.41, SD = 5.56), F(1, 250) = 6.40, p = .012, d = 0.33.

Discussion

This study investigated the experimental effects of military status and gender on public stigma toward individuals with PTSD. We hypothesized that participants assigned to military and male vignette variations would report more stigmatizing attitudes compared to the participants assigned to the civilian and female variations. Participants assigned to the military variations endorsed significantly higher stigmatizing attitudes than participants in the civilian variations. Inspecting specific subscales of the attribution questionnaire, perceivers assigned to the military variation endorsed greater fear of the individual, a perception of the service member as more dangerous, and a heightened desire to segregate the person from the public. Our results provide empirical support for the danger appraisal hypothesis (Corrigan et al., 2003). A possible explanation for the military findings may be the specialized training that military personnel receive. Due to this training, military personnel may be perceived as more threatening, possessing an increased capability of inflicting harm relative to civilians, thus exacerbating the perceived dangerousness of the individual and the fear he or she would elicit. Another possible explanation for the higher reported stigmatizing attitudes toward service members with PTSD may be related to perceptions of personal responsibility and controllability. Service members and veterans, particularly in recent years, most likely made the decision themselves to join the military rather than in response to events outside of their control, such as a military draft. Thus, participants may have attributed more control and responsibility for service members with PTSD presumed to result from this occupational choice. It is difficult to determine how the results from the current study relate to attribution theory, as perceptions of personal responsibility and controllability of the mental illness were not directly assessed. Further research is needed to determine if the differences in stigmatization toward persons with PTSD based on military status

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Table 1

Means, Standard Deviations, and Correlations for the Attribution Questionnaire Total and Subscale Scores

<table>
<thead>
<tr>
<th>Variable</th>
<th>M</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
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<tr>
<td>Total</td>
<td>84.09</td>
<td>30.33</td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Blame</td>
<td>8.83</td>
<td>5.32</td>
<td>.75**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anger</td>
<td>6.77</td>
<td>4.98</td>
<td>.84**</td>
<td>.69**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pity</td>
<td>20.06</td>
<td>5.06</td>
<td>-.30**</td>
<td>-.38**</td>
<td>-.35**</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Help</td>
<td>9.13</td>
<td>5.42</td>
<td>.53**</td>
<td>.30**</td>
<td>.37**</td>
<td>-.64**</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Danger</td>
<td>7.89</td>
<td>5.33</td>
<td>.90**</td>
<td>.60**</td>
<td>.74**</td>
<td>-.22**</td>
<td>.38**</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Fear</td>
<td>7.48</td>
<td>5.31</td>
<td>.89**</td>
<td>.61**</td>
<td>.75**</td>
<td>-.20**</td>
<td>.33**</td>
<td>.88**</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Avoidance</td>
<td>10.70</td>
<td>5.52</td>
<td>.64**</td>
<td>.37**</td>
<td>.37**</td>
<td>-.43**</td>
<td>.68**</td>
<td>.46**</td>
<td>.43**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Segregation</td>
<td>7.21</td>
<td>5.34</td>
<td>.88**</td>
<td>.71**</td>
<td>.77**</td>
<td>-.27**</td>
<td>.31**</td>
<td>.80**</td>
<td>.79**</td>
<td>.41**</td>
<td></td>
</tr>
<tr>
<td>Coercion</td>
<td>6.02</td>
<td>3.81</td>
<td>.80**</td>
<td>.56**</td>
<td>.64**</td>
<td>-.19**</td>
<td>.31**</td>
<td>.68**</td>
<td>.69**</td>
<td>.43**</td>
<td>.90**</td>
</tr>
</tbody>
</table>

Note. One of the Coercion subscale item was removed prior to calculating the Coercion subscale score due to a low factor loading of this item. ** p < .01.
Figure 1. Attribution Questionnaire model diagram with factor loadings of each item and correlations between factors. $e$ = measurement error. All factor loadings and interfactor correlations are statistically significant, $p < .05$. See the online article for the color version of this figure.
are attributable to the perceived dangerousness of the groups or the perceived controllability of the disorder.

Ratings of stigma attitudes did not significantly differ among participants based on gender variations of the manipulation. These findings are inconsistent with past research in which males were perceived as more dangerous, fear-provoking, and needing to be segregated and coerced into treatment compared to females. Socioculturally, females are often characterized as dependent, emotional, and unable to handle stress, whereas their male counterparts are portrayed as rational problem solvers (Thoits, 1991).

The idea that males are more capable of coping with stress may result in the belief that males have more control over mental illnesses such as PTSD and therefore are more responsible for their mental illness. However, more recent research indicates that males and females display similar utilization of problem-solving and coping strategies when faced with stress (Anshel, Sutarso, & Jubenville, 2009; Gianakos, 2000). It is possible that the lack of significant differences between genders represents a cultural shift in beliefs regarding personal responsibility and controllability of mental illness between men and women.

Contact with someone diagnosed with PTSD was also postulated to be related to stigmatizing attitudes. A significant effect of PTSD contact on stigmatization was observed, indicating that perceivers who reported knowing someone with PTSD were less likely to endorse stigmatizing attitudes compared to those who did not know someone with PTSD. This effect is consistent with prior research indicating that when members of the public meet individuals with mental illness who are able to function well in the community, stigma toward those groups diminishes (Corrigan, Edwards, et al., 2001; Corrigan & Watson, 2007; Holmes, Corrigan, Williams, Canar, & Kubiak, 1999). These findings are also consistent with those of Caldwell and Lauderdale (2018) indicating that individuals more familiar with veterans reported lower stigmatizing attitudes toward service members with PTSD.

A final purpose of the study was to examine the factor structure of the AQ-27 when applied to attitudes toward PTSD. The CFA demonstrated the original factor structure held after the original measure was adapted to assess public stigma toward individuals with PTSD. These findings suggest the AQ-27 may be applied to other mental illnesses and serve as a measure of stigmatizing attitudes across multiple psychological conditions, extending the utility of the measure. The poor factor loading of Item 5 (“If I were in charge of Sammy’s treatment, I would require [him/her] to take [his/her] medication”) demonstrates the variation of stigma beliefs toward different mental illnesses. This item may have been more relevant in the original context of the measure when referring to schizophrenia, a disorder that is typically managed through medication (Kane & Marder, 1993). Although pharmacological treatments for PTSD exist, medication is often not a first-line or well-known treatment for PTSD (Stein, Ipser, Seedat, Sager, & Amos, 2006).

Limitations

Limitations should be addressed in future investigations that seek to extend upon the findings of the current study. First, data were not collected from a non-PTSD control variation. Thus, it is difficult to determine what portion of the stigma endorsed by participants is related to the manipulated variables of PTSD specifically versus the fact that the person described and pictured is diagnosed with a mental illness. Second, no manipulation check was utilized in this online study. Thus, it is unknown to what extent participants attended to the pictures and vignette in each variation or if the level of attention impacted scores on the attribution questionnaire. Additionally, although photographs were selected based on assumptions of similarity in attractiveness and age by the experimenters, these assumptions were not empirically tested. Thus, it is impossible to know how much variation is due to the gender manipulation as opposed to other extraneous subtle differences between the photographs. Moreover, the study was relatively limited in its consideration of variables influencing stigma. Although we examined attributions, other variables such as behaviors were not assessed. Another limitation is that the PTSD contact factor merely assessed whether the participants knew someone with PTSD and did not reflect the type of contact or extent of familiarity. Lastly, causal implications cannot be drawn for the nonexperimental factor of PTSD contact. It is possible that unexplored confounding variables, such as the participants’ military experience, may better explain the differences observed as a function of the PTSD contact factor. Future studies should compare vignettes about PTSD with vignettes about substance abuse, depression, schizophrenia, and other psychological disorders to advance the theoretical understanding of attribution theory. It will be beneficial to explore the relationship between stigmatizing attitudes and other outcome variables, for example, behaviors toward the stigmatized person or decision-making regarding the stigmatized individual. Additionally, future studies may further investigate how the subcomponents of public stigma vary depending on the group being stigmatized as well as the driving forces behind these attributions. Advancing research to develop a deeper understanding of all aspects of stigma will inform the development of education designed to reduce public stigma toward those with mental illness in targeted audiences.

Conclusions

Corrigan and Calabrese (2005) emphasize the need to focus on the roles society and institutions play in the construction and maintenance of stigma. For military and veteran stigma, these cultural shifts must happen at the institutional level, which includes government-level decision makers. Previous research indicated that concern exists for the portrayal of inaccurate information about mental illness in the media (Philo et al., 1994). Soldiers and veterans are often depicted as violent, dangerous, or withdrawn in film (Katzman, 1993) or portrayed in the media as physically and mentally damaged by their service overseas (Kleykamp & Hipes, 2015). The media should be utilized to combat public stigma by providing psychoeducation via accurate portrayals of persons, particularly veterans and service members, with PTSD. The efficacy of such approaches has been contested with some studies showing increases in negative attitudes toward mental illness following accurate and empathetic video portrayals (also referred to as contact films) of mental illness compared to an educational film about mental illness (Ritterfeld & Jin, 2006). Other studies have found watching contact films of mental illness produced improvement in pity, empowerment, coercion, and segregation attitudes toward mental illness (Corrigan & Watson, 2007). However, both studies indicated the
References


