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COMPARING STIGMATIZING ATTITUDES TOWARD POSTTRAUMATIC

STRESS DISORDER AND TRAUMATIC BRAIN INJURY

by

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Abstract

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Stigmatizing Attitudes toward Posttraumatic Stress Disorder and Traumatic Brain Injury.
Major Professor: Meghan E. McDevitt-Murphy, Ph. D.

The present study used an experimental design to compare stigmatizing attitudes toward a

hypothetical target individual described, depending on condition, as having Posttraumatic

Stress Disorder (PTSD), Traumatic Brain Injury (TBI), or no diagnostic label.

Attributions for the diagnostic label varied across conditions as either biological or

psychological in cause. Participants were queried about their attitudes toward the

individual described in the vignette, and specific attitudes involving personal

responsibility, pity, anger, fear, helping, and beliefs about coercion-segregation were

examined. Based on modified labeling theory and attribution theory, we predicted that the

highest levels of stigmatizing attitudes would be reported by participants assigned to the

PTSD label/psychological attribution cause condition. We also investigated reported level

of contact with persons with mental illness, personal experience with mental disorder,

trauma exposure, and experience with the military as potential covariates with relations

between conditions and attitudes. Contrary to hypotheses, overall stigmatizing attitudes

were most pronounced in the no label/no attribution condition. Examination of the

specific attitudes mentioned above (e.g., personal responsibility) resulted in mixed

findings, some in line with extant theory and some in contrast. Findings are discussed in

terms of foundational theory, implications, and directions for future research.

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Comparing Stigmatizing Attitudes toward Posttraumatic Stress Disorder and Traumatic

Brain Injury

PTSD, as defined in the fifth edition text revision of the Diagnostic and Statistical

Manual of Mental Disorders (American Psychiatric Association, 2013), is an anxiety

disorder uniquely characterized by the requirement that the individual have experienced

an event that involves the threat of death, serious injury, or violation of physical integrity.

The emotional response to the event must involve intense fear, helplessness, or horror,

and the individual must endorse a minimum number of symptoms from a set of clusters

including reexperiencing elements of the traumatic event, avoidance of stimuli related to

the event and general numbing of emotion and responsiveness, and persistent elevated

physiological arousal. Finally, the set of symptoms must be present for more than one

month, and must cause clinically significant distress or impairment in important areas of

the individual's life.

Large-scale epidemiological studies show that psychological trauma is a common

experience, with 69% (Norris, 1992; Resnick, Kilpatrick, Dansky, Saunders, & Best,

1993) to 90% (Breslau et al., 1998) of U.S. participants reporting lifetime exposure to a

qualifying traumatic event, depending on geographic location and sample. Estimates of

lifetime rates of PTSD in the United States tend to be stable across time and studies, and

range from 7% (Kessler et al., 2005) to 12% (Resnick et al., 1993). Among military

service personnel and veterans, trauma exposure is common during wartime; for

example, up to 89% of combat infantry deployed in Afghanistan or Iraq reported

experiencing a potentially traumatic event (Hoge et al., 2004). PTSD is one of the most

common negative health outcomes for veterans of recent armed conflicts, with one

population-based study showing nearly 10% of U.S. soldiers returning from Iraq and 5% returning from Afghanistan screened positive (Hoge, Auchterlonie, & Milliken, 2006).

The stigma associated with the PTSD diagnosis is an important factor to consider when evaluating the impact of PTSD. Stigma is cited as one of the most important barriers to mental health care for military populations (Hoge, Castro, & Messer, 2004). A growing body of literature has shown that many veterans with PTSD do not seek treatment because of associated stigma, and stigma in these populations has been linked to negative attitudes toward mental health care (Ouimette et al., 2011; Pietrzak, Johnson, Goldstein, Malley, & Southwick, 2009). More broadly, mental disorder collectively accounts for more than 15% of the burden of all disease of all types and causes, and 4 of the 10 leading causes of disability worldwide are mental disorders (Hinshaw & Cicchetti, 2000; Murray & Lopez, 1996). Research has shown that stigma plays a crucial role in the harmful effects of mental illness at the societal and individual level, resulting in diminished access to care (Druss & Rosencheck, 1998), willingness to seek treatment (Corrigan, 2004; Regier et al., 1993), lowered perceptions of self-esteem and self-worth (Wahl, 1999; Watson, Corrigan, Larson, & Sells, 2007), reduced access to meaningful employment and safe housing (Heather, 2006; Carling, 1990), and loss of civil rights such as voting, holding public office, and marriage (Hemmens, Miller, Burton, & Milner, 2002).

Empirical investigation has shown that, particularly for less chronic forms of mental illness, stigma may impart a burden independent of the symptoms of a disorder. For example, Link and colleagues found in a longitudinal study of dual-diagnosis inpatients that the pretreatment association between stigma endorsement and distress and

impairment remained unchanged following treatment, even as symptoms of the primary disorder being treated (e.g., schizophrenia, bipolar) and comorbid substance use declined substantially. Stigma reduction may therefore be an appropriate target for intervention (Link, Struening, Rahav, Phelan, & Nuttbrock, 1997; Wright, Gronfein, & Owens, 2000). It is becoming apparent that that stigma is a formidable barrier to progress in prevention and treatment of mental disorder (US Department of Health and Human Services, 1999; World Health Organization, 2001).

Attribution and Stigma

The belief that physical or biological, versus psychological, explanations for mental disorder will reduce stigma has become widespread. This view is reflected in public statements made by one of the most prominent mental health advocacy groups, for example, "scientific research has greatly expanded our understanding and firmly established that mental illnesses like major depression are biologically based brain diseases" (Johnson, 1989; National Alliance on Mental Illness, 2012). The pharmaceutical industry has also promoted the idea that depression is caused by a "chemical imbalance," treatable by medication, in television advertisements with broad distribution (Lacasse & Leo, 2005). Pharmacotherapy is becoming the most common treatment modality for mental illness, a complex phenomenon due at least in part to the influence of the brain disease model of mental disorder (Kirsch, 2011). This biological approach shifts attribution of cause away from psychological processes, which are assumedly under the control of the individual, to biological processes, which exist outside of conscious control. Biological malfunction is thought to be more forgivable (Weiner, Perry, & Magnusson, 1988). Mental illness is undertreated in part due to the effect of

stigma as a barrier to care (Corrigan, 2004), and it seems reasonable that messages attempting to reduce stigma by moderating the effects of labeling may be appealing to consumers. Little research has investigated whether biological attributions for mental disorder result in less stigmatizing attitudes, and results have uncovered a complex picture. For example, one study found that disease explanations versus psychological attributions for disordered behavior are associated with less blame placed on the individual, but approval of more coercive and punitive behavior toward the afflicted individual (Mehta & Farina, 1997). Describing mental illness as a brain disorder may imply that recovery is not possible, invoking fundamental "differentness" and separation, which is related to so-called benevolence stigma in which the target is perceived as incapable in functioning as an autonomous adult (Corrigan & Watson, 2004).

Studies have compared attitudes toward mental disorder with attitudes toward physical conditions (e.g., "former back pain patient"), showing that reactions are far more likely to be negative toward the former (Link, 1987). However, these comparisons involve a fundamental problem in that people probably expect the disorder-driven behavior of individuals with mental illness to be very different from those with physical problems. For example, it could be that individuals with a history of hospitalization for back pain are perceived more favorably because their symptoms are less threatening in nature, rather than the "back pain patient" label activating less negative stereotypes. Some studies have attempted to further investigate the attitudes associated with various labels through the use of vignettes (Link, Yang, Phelan, & Collins, 2004). In studies of this type, participants are provided with a behavioral description of a hypothetical individual whose label is manipulated. For example, a survey compared four labels for an

individual with schizophrenia, finding that "politically correct" labels (e.g., "consumer of mental health services") received less negative reactions along some dimensions compared to diagnostic labels (e.g., "schizophrenic") (Penn & Nowlin-Drummond, 2001). However, these studies often involve what may be an important gap between labeling, activated stereotypes, and expected behavior – they frequently do not address the problem of behavior not matching relevant stereotypes. Studies of this type have reported on paradigms that asked participants to compare across discordant categories (such as the earlier example, comparing individuals labeled as back pain patients to individuals labeled as mentally ill), limiting examination of the specific effects of labeling on mental illness stigma.

Overlap between Posttraumatic Stress Disorder and Traumatic Brain Injury

Comparisons of attitudes toward Posttraumatic Stress Disorder (PTSD) and Traumatic Brain Injury (TBI) may provide an opportunity for an investigation of the effect of psychological versus biological attributions for mental disorder. As a result of military actions in Afghanistan and Iraq, PTSD and TBI have received a great deal of recent attention in the media and in the scientific literature, and have often been referred to as the "signature wounds" of these wars (Department of Defense Task Force on Mental Health, 2007).

TBI is a syndrome that is caused by an external force damaging the structure and function of the brain. Head injury does not always cause TBI, and TBI is typically classified based on mechanism (closed vs. penetrating insult to the brain), clinical severity (most widely assessed by the Glasgow coma scale which assesses eye, motor, and verbal performance; Teasdale & Jennett, 1974), and neuroimaging assessment of

structural damage. TBI damage may result from both the primary impact trauma (e.g.,

concussive blast or gunshot wound to the head), associated with shearing of neural tracts,

contusions, hematoma, and hypoxia of brain tissue, and so-called secondary damage,

which occurs in the hours and days after the trauma and is associated with

neurotransmitter dysfunction and inflammatory responses to the initial injury (Maas,

Stocchetti, & Bullock, 2008). Less severe, closed-head TBI associated with shorter

periods of loss of consciousness and more difficulty in assessing structural damage has

become especially relevant in the current military combat context, thought to be most

frequently caused by blast explosions and resulting concussive waves ("barotrauma"). So

called "mild TBI" is characterized by persistent behavioral symptoms including

irritability, problems with memory, headache, and problems with concentration (Hoge et

al., 2008). In a large-scale study of TBI prevalence, about 75% cases were best

categorized as mild (Langlois et al., 2003).

There is a some symptom overlap between PTSD and mild TBI, with symptoms

such as emotional numbing, depersonalization and derealization, amnesia, emotional

reactivity to trauma cues, social detachment, diminished interest, insomnia, irritability,

and concentration deficits attributable to either syndrome (Bryant, 2001; Bryant,

Marosszeky, Crooks, & Gurka, 2000). Although etiologies of these disorders are distinct

theoretically (again, however, with some overlap), both may result from many of the

same types of events (e.g., riding in a vehicle destroyed by a roadside bomb may be a

causal event driving a clinical diagnosis of either PTSD or TBI) but TBI is clearly

conceptualized as a biological phenomenon, while PTSD is conceptualized as a

psychological disorder (to wit, PTSD is included in the DSM, while TBI is not). The

similarity in triggering events, the symptom overlap, and the difficulty in identifying

actual structural damage in the brain are factors that coalesce to create the potential for

considerable diagnostic ambiguity between these disorders, especially for milder forms of

TBI (which represent the greatest number of cases). Indeed, in one study 44% of soldiers

with TBI also met criteria for PTSD (Hoge et al., 2008). The symptom overlap and

diagnostic ambiguity between PTSD and TBI allow for a paradigm directly comparing

biological to psychological attributions for disordered behavior.

Stigma Theory

Link and Phelan's (2001) integrative theory of social stigma proposes that the

process is best conceptualized as the co-occurrence of labeling, stereotyping, separation,

status loss, and discrimination, operating in the context of a power differential. This

theory challenges assertions that the deviant behavior of an individual is what primarily

determines the evaluations and reactions that result in stigma. Instead, the labeling of an

individual as a member of a group with a broadly undesirable attribute (e.g., mentally ill,

HIV positive) leads to a cascade of negative consequences operating at levels from the

social cognitive to the societal. For example, for an individual who has received a

diagnosis of schizophrenia, the diagnosis may serve as a label that is associated with

negative connotations and that may set the stage for stereotyping. The associations

between the label and attributes like "danger" serve to justify social separation resulting

in "schizophrenics" being viewed and treated as different from others. This social

separation is directly related to status loss and discrimination, for example the difficulty a

person with schizophrenia might have attaining employment, housing, or a romantic

relationship. The entire process is dependent on power – stereotyping, or other elements

of this model, can happen when members of low-power groups negatively evaluate members of high-power groups, but for stigma to occur associations between the label and negative attributes must become broadly learned and accepted in the culture *and* result in disadvantage for the target of the label. For example, investment bankers may be stereotyped as greedy or callous, but the generalization does not tend to result in significant loss of opportunity or social status, and so according to this model we would be in error to say investment bankers are a stigmatized group.

The cognitive relationship between a label and undesirable attributes is often difficult to challenge. Labeling theory states that we learn the content of stereotypes as a consequence of cultural socialization, and consequently selectively attend to information consistent with the label (Link, Cullen, Struening, Shrout, & Dohrenwend, 1989). Mental illness stigma is a salient example of this socialization: some of the most common pejorative words used in contemporary language are mental illness colloquialisms (e.g., "he's such a psycho," or "she must be crazy"), which are often learned at an early age and used so frequently as to become unnoticeable as pejorative (Wahl, 1995). As labeling and resulting stereotyping is more likely to result in rejection than the actual behavior of an individual in many contexts, it becomes reasonable to think that a reasonable defense against stigmatization is to avoid labels associated with greater stigma. This may create situations in which disordered behavior may be less stigmatized if attributed to a label that has less negative associations.

Variables influencing stigma endorsement. The contact hypothesis, as it relates to mental disorder, states that personal experience with people with mental illness is associated with reduced endorsement of stigmatizing attitudes and beliefs (Corrigan &

Penn, 1999). Increased contact of various types with individuals with severe mental illness has been shown to be associated with reduced stigma, both prospectively (e.g., campaigns to reduce stigma by creating contact with people with mental disorder), and retrospectively (e.g., those with more previous contact report lower stigmatizing attitudes) (Couture & Penn, 2003). Potential mechanisms include habituation to threat reactions associated with mental disorder stimuli (Blascovich, Mendes, Hunter, Lickel, & Kowai-Bell, 2001) and cognitive dissonance created by encountering individuals whose characteristics do not match expectations regarding people with mental illness (Gaertner, Mann, Dovidio, Murrell, & Pomare, 1990).

The Present Study

In an effort to investigate the effects of psychiatric labels, we assessed attitudes toward PTSD and TBI using an experimental paradigm. Participants were randomly assigned to one of four conditions, where they were presented with a written vignette that described a brief case study describing a hypothetical individual's behavior and labeling that individual as having either PTSD or TBI. The vignettes also varied with respect to the implied cause of the disordered behavior (biological vs. psychological). The purpose of the experimental manipulation was to examine the causal role of labels (i.e., PTSD vs. TBI) and attributions (i.e., biological vs. psychological) for disordered behavior on stigmatizing attitudes. Ultimately, the four groups participants were randomized to included PTSD/psychological attribution, PTSD/biological attribution, TBI/biological attribution, and no label/no attribution. The no label group was included to establish a baseline of attitudes toward the individual described and their disordered behavior absent the effect of labeling and attribution.

We hypothesized the following:

1. Participants in the PTSD/psychological condition would report the highest levels of overall stigmatizing attitudes toward the target in the vignette, relative to the other three conditions (including the no label/no attribution condition).

2. Participants in the PTSD/psychological condition would report the greatest levels of attributions of personal responsibility for disordered behavior toward the subject of the vignette, anger toward the target, and beliefs that the target should be helped relative to the other three conditions.

3. Participants in the PTSD/biological condition would report greater levels of fear and coercion-segregation beliefs toward the target compared to the PTSD/psychological condition.

4. Participants in the TBI/biological condition would report the greatest levels of fear and coercion segregation beliefs toward the target relative to the other three conditions.

5. Participants in the no label/attribution condition would report the lowest overall levels of stigmatizing attitudes.

Stigmatizing attitudes would be negatively correlated with degree of personal experience with mental disorder symptoms and being the object of labeling, amount of experience with others labeled with a mental disorder, and level of experience with persons in the military. If these variables were found to be correlated with stigmatizing attitudes they were controlled for in the final analyses.

Method

Participants

Of the 301 participants who took part in the study, 74.8% of participants were female ($n = 225$). The sample was ethnically diverse, with 41.9% identifying as Caucasian ($n = 126$), 41.5% as African American ($n = 125$), 6.6% as multiethnic ($n = 20$), 3% as other ($n = 9$), 2.3% as Asian ($n = 7$), 2.0% as Hispanic ($n = 6$), and .3% as Native American ($n = 1$). Participants ranged in age from 18 to 55 years old ($M = 21.39$, $SD = 5.95$). 2.3% did not report demographic data ($n = 7$).

Procedure

Participants were undergraduate students recruited through the University of Memphis psychology department using SONA Systems (memphis.sona-systems.com), an Internet-based research participation tool that allows students enrolled in courses to engage in University-sponsored research in exchange for course credit. The scope of the study involved general attitudes toward the stimuli of interest, and thus no restrictions were placed on the sampling procedure. All data were collected online. Participants were asked to provide informed consent before completing the survey questionnaires. The study description on the SONA Systems website read as follows:

> We are interested in learning about attitudes toward people who have had traumatic or stressful experiences and their reactions that may follow these experiences. You do not have to have had a traumatic event happen to you in order to participate. Our study consists of a brief set of online surveys measuring attitudes toward trauma survivors. Participation in the study is entirely voluntary, and our only requirement is that you be at least 18 years of age. The study will be performed online in a single session, and should take

about 1 hr to complete. You will receive 1 credit for completing the survey

and computer task. This study is being conducted by a clinical psychology

graduate student at the University of Memphis, and has received the approval

of the University's Institutional Review Board.

Participants were randomized to one of four conditions:

    1. PTSD label/psychological attribution

    2. PTSD label/biological attribution

    3. TBI label/biological attribution

    4. No label or attribution condition

All participants completed the same questionnaires, but the condition to which the

participant was randomized determined the labels and attributions associated with the

target being evaluated.

Materials

    Vignettes. Depending on the condition into which they were randomized,

participants were presented with one of four vignettes describing a fictional individual

who was the target of their evaluations. For three of the conditions, descriptions of the

individual and his behavior were be identical, save for the diagnostic label and the

attribution for the label. A fourth comparison condition described the individual and

behavior as in the previous conditions, but omitted labels and attributions. The symptoms

described were identical across conditions, and reflect symptoms present in both

disorders (as reviewed by Bryant, 2001 & 2011).

    The content of the vignettes were as follows (bold text is used here to emphasize

the differences between conditions):

1. PTSD label/psychological attribution condition:

   John is a 30-year-old Iraq War veteran who is now home from his tour of duty. While in Iraq, he was a passenger in a truck hit by a roadside bomb. John was diagnosed with **Posttraumatic Stress Disorder (PTSD)** as a result of this incident. **PTSD** is a common **psychological** disorder following trauma. As a result of his **PTSD**, John is currently troubled by angry outbursts, intense emotions when reminded of the explosion, problems concentrating, reduced interest in hobbies and socializing with friends, memory problems, and feeling emotionally numb.

2. PTSD label/biological attribution condition (note that the attribution for the cause of the disorder has been changed):

   John is a 30-year-old Iraq War veteran who is now home from his tour of duty. While in Iraq, he was a passenger in a truck hit by a roadside bomb. John was diagnosed with **Posttraumatic Stress Disorder (PTSD)** as a result of this incident. **PTSD** is a common **biological brain** disorder following trauma. As a result of his **PTSD**, John is currently troubled by angry outbursts, intense emotions when reminded of the explosion, problems concentrating, reduced interest in hobbies and socializing with friends, memory problems, and feeling emotionally numb.

3. TBI label/biological attribution condition:

   John is a 30-year-old Iraq War veteran who is now home from his tour of duty. While in Iraq, he was a passenger in a truck hit by a roadside bomb. John was diagnosed with **Traumatic Brain Injury (TBI)** as a result of

this incident. **TBI** is a common **biological brain** disorder following

trauma. As a result of his **TBI**, John is currently troubled by angry

outbursts, intense emotions when reminded of the explosion, problems

concentrating, reduced interest in hobbies and socializing with friends,

memory problems, and feeling emotionally numb.

4. No label or attribution condition:

John is a 30-year-old Iraq War veteran who is now home from his tour of

duty. While in Iraq, he was a passenger in a truck hit by a roadside bomb.

John is currently troubled by angry outbursts, intense emotions when

reminded of the explosion, problems concentrating, reduced interest in

hobbies and socializing with friends, memory problems, and feelings that

his emotions have become numb.

Manipulation check. Participants were assessed for comprehension of the

vignette material. After being presented with the vignette, they were asked two questions,

as follows: "Did you read all of the previous passage?" and "what was John diagnosed

with?" If participants answered incorrectly, they were redirected back to the vignette.

Questionnaires (see Appendix A)

The Attribution Questionnaire (AQ; Corrigan, Markowitz, Watson, Rowan, &

Kubiak, 2003). The AQ, which served as the primary outcome measure, is a 21-item self-

report questionnaire designed to measure six interrelated constructs relevant to

attributions regarding mental illness and resulting prejudice, including (1) Personal

Responsibility (the degree to which the respondent believes the target's mental disorder is

under their control), (2) Pity (the amount of pity and sympathy reported for the target),

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(3) Anger (anger and irritation toward the target), (4) Fear/Dangerousness (how threatening the target is perceived as), (5) Helping (how likely the respondent is to avoid helping the target), and (6) Coercion-Segregation (how voluntary treatment and housing should be for the target). The AQ is intended to assess attributions toward a hypothetical individual described in a vignette. Items are rated on a 9-point Likert scale ranging from "not very much" (1) to "very much" (9). A higher sum score indicates greater negative bias toward the target. Sample items include, "I would think that it was John's [referring to the hypothetical individual described in the vignette] own fault that he is in the present condition" and, "How dangerous would you feel John is?" In the original Corrigan et al. study (2003), the AQ demonstrated good internal reliability for the six included constructs, with alpha values ranging from .70 to .96. The AQ has also demonstrated good construct validity across several studies; for example, those who rated people with mental illness as less blameworthy on the AQ were more likely to perform real-world helping behavior (Corrigan et al., 1999), and relevant constructs of the AQ (e.g., perceived controllability predicting avoidance and increased support for coercive treatment) correlate as predicted by the theory behind its design (Corrigan et al., 2003). For the present study, the AQ showed good internal consistency for the greater 21-item measure (α = .82), with subscales ranging from good to excellent as follows: Personal Responsibility (α = .81), Pity (α = .89), Anger (α = .88), Fear (α = .94), Helping (α = .82), and Coercion-Segregation (α = .88).

The Level of Contact Report (LOCR; Holmes, Corrigan, Williams, Canar, & Kubiak, 1999). Reported levels of contact with individuals with mental illness will be considered as a covariate with attitudes. The LOCR is a self-report instrument consisting

of 12 situations involving increasing degrees of interaction with individuals with mental disorder, starting with "I have never observed a person that I was aware of that had a mental illness" (1) to "I have a mental illness" (11). To ensure the applicability of the measure to a broad sample, it will be slightly modified to inform participants that the term "mental illness" encompasses a range of diagnoses from depression and anxiety disorders to more "serious" mental illnesses such as schizophrenia and bipolar disorder. Participants are instructed to endorse all items that apply to them, and the overall score is a rank reflecting the degree of intimacy or familiarity with individuals diagnosed with mental illness. Higher scores reflect greater levels of reported familiarity. For the present study, internal consistency was good ($\alpha = .71$).

The Life Events Checklist (LEC; Gray, Litz, Hsu, & Lombardo, 2004). Traumatic life experiences will also be investigated as a potential covariate with stigmatizing attitudes. The LEC is a 17-item self-report measure intended to screen for lifetime exposure to traumatic events. Participants are presented with a list of 17 potentially traumatic events (e.g., "sudden, unexpected death of someone close to you") and asked to indicate whether the event happened to them, they witnessed it, they learned about it, are not sure whether it is relevant, or does not apply. The number of events directly experienced by the participant will be summed to create an index of exposure to trauma, with higher scores indicating greater reported exposure.

Personal Experience with Mental Disorder. (PEMD). Participant experiences with mental disorder symptoms and experiences were investigated as a potential covariate with attitudes. A brief 14-item questionnaire was written by the author specifically for this study, based on typical experiences with mental disorder. Some

example items include, "I have never had any mental illness symptoms like anxiety or depression" and "My doctor has prescribed an antidepressant or other medication to treat mental health symptoms." Responses were "yes" or "no" for each item. The number of symptoms and experiences endorsed by the participant were summed, with greater scores reflecting greater personal experience with mental disorder. In this study, the PEMD showed good internal consistency ($\alpha = .80$).

Level of Contact with Military. (LOCM). Because prior contact with the military was thought to potentially influence responses in this study, and we were unable to find an existing measure of this construct, we created this questionnaire. The LOCM includes 11 items describing varying degrees of contact and familiar with the military and its members. Example items include, "I have a friend who has served in the military during peacetime or outside of a combat situation" and "I would like or am working toward a military career." Participants checked all applicable items which were then summed, with higher scores reflecting greater familiarity with the military. Internal consistency for this measure was acceptable ($\alpha = .65$).

Data Analysis Plan

The data were examined for completeness. Of 301 participants, 96% (N = 289) completed all measures. Pairwise deletion was chosen considering the relatively small amount of missing data (Roth & Switzer, 1995). No measure exceeded 5% missing items per case. Outliers were identified and corrected based on the recommendations specified by Tabachnick and Fidell (2007); one outlier was corrected each for AQ and PEMD by

replacing these values with the adjacent non-outlier score. The primary study variables

(AQ, PEMD, LOCR, LOCM, and LEC) were analyzed for skewness and kurtosis. None

were significantly skewed or kurtotic.

To examine the effect of labeling and attribution on stigmatizing attitudes while

accounting for the influence of potential covariates, a one-way analysis of covariance

(ANCOVA) was conducted in which the independent variable, group assignment,

involved four levels: PTSD/psychological, PTSD/biological, TBI/biological, and no

label/no attribution. Stigmatizing attitudes as measured by the full AQ score was the

dependent variable. Covariates were included in the ANCOVA model if they were

significantly correlated with the dependent measure and uncorrelated with group

assignment. A series of post-hoc pairwise comparisons using the Sidak correction method

were performed to test the study hypotheses concerning group differences.

Additionally, we conducted an exploratory multivariate analysis of covariance

(MANCOVA) to examine the effect of group assignment on the six subscales of the AQ

(i.e., Personal Responsibility, Pity, Anger, Fear, Helping, and Coercion-Segregation). The

same potential covariates were examined for inclusion as described above. Similarly to

the above analysis, a series of Sidak-corrected post-hoc contrasts were performed.

<div align="center">**Results**</div>

Demographic Group Differences

Independent samples t-tests were conducted to examine demographic group

differences for variables of interest (i.e., AQ, PEMD, LOCR, LOCM, and LEC). Women

reported significantly higher levels of personal experience with mental disorder on the

PEMD than men ($M = 2.46$, $SD = 2.54$ for women, $M = 2.07$, $SD = 2.04$ for men, t

(292) = -1.17, p = .03). African Americans had a higher mean score on the PEMD than

Caucasians (M = 3.04, SD = 2.71 for African Americans, M = 1.61, SD = 1.73 for

Caucasians, t (249) = 4.95, p < .001). No other significant group differences were

detected.

Correlations and Descriptive Statistics

Pearson correlations were calculated for the primary study variables. The

following proposed covariates had small but significant correlations with the dependent

variable AQ in the directions hypothesized: PEMD (r = -.14, p = .02), LOCM (r = -.16, p

= .01), and LEC (r = -.15, p = .01) and so these variables were included as covariates in

the ANCOVA and MANCOVA. Means, standard deviations, and correlations are

presented in Table 1.

ANCOVA for Stigmatizing Attitudes by Diagnostic Label/Attribution Condition

The assumptions for ANCOVA investigating group differences on the full scale

AQ score were met. PEMD, LOCM, and LEC were significantly correlated with the

dependent variable AQ and were therefore included as covariates in the ANCOVA

model. There were no significant interactions between the covariates and the dependent

variable AQ, implying homogeneity of the regression slopes. A Levene's test of equality

of error variance was nonsignificant, implying homogeneity of variance for the dependent

variable across conditions.

The ANCOVA was significant, F (6, 281) = 5.86, p < .001 and details are

presented in Table 2. Contrary to hypotheses 1 and 5, the no label/no attribution

condition had the highest adjusted levels of stigmatizing attitudes (M = 85.1, SEM =

2.24), which, in post-hoc Sidak-corrected pairwise testing, was significantly higher than

the PTSD/biological condition ($M = 75.38$, $SEM = 2.1$, $p = .01$) and the TBI/biological condition ($M = 71.3$, $SEM = 2.3$, $p < .001$) but not the PTSD/psychological condition ($M = 78.53$, $SEM = 2.24$, $p = .213$). Table 3 summarizes adjusted mean differences and Figure 1 depicts adjusted means.

MANCOVA for Stigmatizing Attitudes Subscales by Diagnostic Label/Attribution Condition

The assumptions for a MANCOVA investigating the subscales of the AQ measure were met. PEMD, LOCR, LOCM, and LEC were found to be significantly correlated with the dependent variables and were therefore included as covariates in the MANCOVA model. Levene's tests of equality of error variances for each dependent variable were nonsignificant, which was taken as evidence of homogeneity of variances for the dependent variables across conditions. A Box's test of equality of covariance matrices was nonsignificant, implying homogeneity of covariances.

In the corrected model, there were significant group differences for all subscales of the AQ: Personal Responsibility, $F(7, 280) = 9.87$, $p < .001$, Pity, $F(7, 280) = 7.04$, $p < .001$ Anger, $F(7, 280) = 4.43$, $p < .001$, Fear, $F(7, 280) = 2.93$, $p = .006$, Helping, $F(7, 280) = 6.16$, $p < .001$, and Coercion-Segregation, $F(7, 280) = 3.83$, $p = .001$. Table 4 summarizes results of the MANCOVA test.

Post-hoc pairwise comparisons were used to test study hypotheses. Consistent with hypothesis 2, the PTSD/psychological condition ($M = 6.91$, $SEM = .48$) had a significantly higher adjusted mean score on the Personal Responsibility subscale, in which higher scores indicate greater perceptions of internal control and responsibility for mental disorder, than the PTSD/biological ($M = 4.00$, $SEM = .45$, $p < .001$) and

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TBI/biological (M = 3.72, SEM = .50, p < .001) conditions; however, there was no significant difference between PTSD/psychological and no label/attribution (M = 7.96, SEM = .48 p = .56). Examining the Anger subscale, results were mixed regarding hypothesis 2: the PTSD/psychological condition (M = 7.66, SEM = .56) had a significantly higher mean score on Anger (with higher scores meaning the respondent would feel more anger toward the subject) than the TBI/Biological condition (M = 4.23, SEM = .58, p < .001) but not PTSD/Biological (M = 6.80, SEM = .52, p = .85) or no label/attribution (M = 7.23, SEM = .56, p = .99). Contrary to hypothesis 2, Helping scores, which were reverse coded such that higher scores indicated less reported willingness to help the target, were not significantly higher for PTSD/Psychological than any other condition. Contrary to hypothesis 3, the PTSD/Biological group mean scores for Fear (in which higher scores indicated greater perception of dangerousness) and Coercion-Segregation (with higher scores meaning greater endorsement of social separation and involuntary treatment for the target) were not significantly higher than for the PTSD/Psychological condition. Finally, with respect to Hypothesis 4, which predicted that the TBI/Biological condition would have higher mean scores than the other 3 conditions on the fear and coercion subscales, our findings did not confirm this. For Fear, the TBI/Biological condition mean score (M = 12.91, SEM = .933) was significantly lower than no label/no attribution (M = 18.13, SEM = .91, p < .001) but there were no significant differences when compared to the PTSD/Psychological condition (M = 14.81, SEM = .91, p = .61) or the PTSD/Biological condition (M = 14.40, SEM = .85, p = .80). Examining Coercion-Segregation, there were no significant differences between TBI/Biological and any other condition.

Summary of Findings

Generally, study hypotheses were not supported. Interestingly, participants in the no label/no attribution condition reported greater levels of stigmatizing attitudes compared to participants in label conditions. Examining subscales of the dependent variable provides a more mixed picture. Differences between groups on many subscales were small. However, the most distinct differences were in theoretically-relevant subscales such as Fear/Danger and Personal Responsibility, in which results mirror the ANCOVA; i.e., for these subscales, participants in the no label/attribution condition reported the highest levels of stigmatizing attitudes.

Discussion

This research study experimentally investigated the combined effects of psychiatric diagnosis labeling with a specific focus on the distinction between posttraumatic stress disorder (PTSD) and traumatic brain injury (TBI) and attribution (psychological vs. biological vs. no attribution) on stigmatizing attitudes toward a fictitious individual with mental disorder following trauma as described in a vignette. The current study tested labeling theory and attribution theory as relevant to mental disorder stigma in a novel manner, using specific diagnostic labels, while describing the same disordered behavior across label and attribution conditions. Taking advantage of the diagnostic ambiguity between PTSD and TBI, the disordered behavior ascribed to the target individual was typical of either disorder allowing for isolation of the effect of labeling and attribution.

In terms of overall stigmatizing attitudes, there were no significant group differences between the three groups who read a vignette that provided a diagnostic label

and attribution. However, the fourth group (no label/no attribution) evidenced the highest

overall level of stigmatizing attitudes, significantly higher than attitudes toward the

individual in the PTSD/biological condition and TBI/biological condition and similar in

level to the PTSD/psychological condition. We had predicted, based on labeling theory,

that diagnostic labels would cause greater levels of reported stigmatizing attitudes. This

surprising finding suggests that both PTSD and TBI diagnostic labels may protect against

stigmatizing attitudes when combined with biological attributions for disorder. This is

contrary to modified labeling theory (Link et al., 1989) which states that labels are a

primary causal agent of negative attitudes toward individuals with mental disorder, and

may have a greater influence on observers' perceptions of individuals with psychological

disorder than do the disordered or deviant behavior. Labeling theory is an important

component of Link and Phelan's influential theory of social stigma (2001), upon which

many of the current study's hypotheses were based. There are a number of potential

reasons the current study deviated from these important theories. First, we used very

specific labels. Rather than considering mental disorder as a broad, diffuse construct, we

used specific diagnostic labels. The causal effect of these specific diagnostic labels on

stigmatizing attitudes has not been investigated to our knowledge. Second, we used the

same description of the individual's behavior in all of the vignettes, altering only the

diagnostic label (PTSD/TBI) and whether the disorder was described as biological or

psychological. It may be that in this instance, diagnostic labels helped participants

understand and empathize with threatening or confusing behavior. It is also possible that

attitudes toward mental disorder are changing. There has been a great deal of effort to

fight the stigma of PTSD and other war-related mental health problems, as well as mental

disorder stigma more broadly (e.g., Corrigan, 2011, 2012; Dickstein, Vogt, Handa, & Litz 2010). Perhaps these efforts have been successful. Although this would be encouraging, without further investigation it is not possible to speculate whether it is veteran-related mental health attitudes that are improving or attitudes overall. It is also possible that diagnostic labels are protective. This would be very interesting, as there have been findings that perceptions of dangerousness are one of the most important perceptions driving stigmatizing beliefs. It may also be that the findings are better explained by attribution theory. Finally, another potential explanation for these findings is that all participants were undergraduate students in psychology courses and perhaps this group is less inclined toward stereotyping individuals with psychological disorders; however, much research on the social stigma of mental disorder has included psychology students as their subject pool.

Findings for subscales of the stigma measure were mixed. First, participants in the PTSD/psychological condition and the no label/no attribution condition had a higher mean score on the Personal Responsibility subscale than the other two conditions. This suggests that participants believed the target had greater control over and responsibility for their disordered behavior when said behavior was not associated with or explained by a label or attribution. Perceptions of responsibility and control are central to attribution theory (Weiner et al., 1988). Disordered actions perceived to be under the control of the actor are generally judged more negatively compared to those whose mental health status is not controllable. However, it has also been observed that those who are seen to have little chance for control of their deviant actions are judged to be fundamentally different from the observer (Corrigan & Watson, 2004). Biological versus psychological

attributions for disordered behavior are generally consistent with less personal

responsibility and control (Weiner et al., 1988). In the present study, we saw that the

PTSD and TBI labels combined with biological attributions for disorder cause lower

perceptions of controllability and responsibility, which is generally consistent with

attribution theory.

Perceptions of fear and dangerousness are important when examining mental

illness stigma. Fear of the person carrying a diagnosis may be one of the primary

mechanisms driving stigma (Martin, Pescosolido, & Tuch, 2000). Our results show that

participants reported the greatest levels of fear and dangerousness for the no label/no

attribution condition. The difference was significant between the TBI/Biological

condition and the no label/no attribution condition, which evidenced the largest

difference. Again, it may be that a label that seems to account for, or to explain

dangerous or threatening behavior creates understanding and reduces perceived risk. The

pattern of scores on the Anger subscale was somewhat similar to the Fear subscale, in

that the TBI/Biological condition had the lowest scores. Participants reported the least

anger in this condition, but scores on the anger subscale were not differentiated across the

other conditions. This is in line with attribution theory in that participants reported that

they would be least angry when the vignette they read described a scenario wherein the

disordered behavior was likely perceived to be outside of the subject's conscious control.

The pattern of findings related to benevolent attitudes was interesting. Participants

in the TBI/Biological condition reported the highest levels of Pity, while participants in

the PTSD/Psychological condition reported the lowest level, although with respect to

Helping (willingness to help the target), there were no significant differences across

conditions. Finally, there were not any group differences for Coercion-Segregation. This may be because the language for this subscale is not relevant to modern conceptions of mental disorder – coercive inpatient hospitalization is far less frequent than in the past. But, of course, much of stigma theory is based on cultural perceptions regarding mental illness, so it is difficult to say if it captures relevant attitudes.

Our findings might be interpreted as encouraging. Participants reported more stigmatizing attitudes when the described behavior was not labeled or attributed to psychological or biological causes. It might be that for PTSD and TBI these labels helped participants make sense and understand what would otherwise be dangerous and threatening behavior. It is possible that anti-stigma campaigns have improved attitudes toward individuals with mental disorder. In particular, a number of agencies have made efforts to reduce the stigma of mental illness for returning veterans of recent conflict (e.g., Dingfelder, 2009). More broadly, it may also be that the specificity of diagnostic labels reduces stigmatizing attitudes. This is an understudied area. Overall, it appears consistent with attribution theory that in the present study attribution had a larger impact on attitude than label, but it is difficult, because of the size of the effects and the design of the study, to tease out the individual contribution of each factor.

Limitations of the Present Study

There are some limitations of the present study. The sample was comprised of students taking at least one psychology course, which introduces the possibility that their attitudes toward mental illness are not representative of broader populations. However, the university at which the research was conducted has a diverse student body, which is reflected in the current sample's demographics. Additionally, because of social

desirability biases or limited self-awareness, participants are not always willing or able to disclose stigmatizing attitudes via self-report. This phenomenon has been documented in other domains, such as race (Greenwald & Banaji, 1995), but is not well studied in mental health stigma, which may still be acceptable to for many to disclose. Finally, interactions between label and attribution would have been interesting to examine, but would have required a different design.

Future studies should address several issues raised by this research. First, broader samples are necessary to determine whether labeling and providing attributions protect against mental disorder stigma. Other specific diagnostic labels should be investigated, perhaps on a continuum of association with fear and dangerousness. Non-self-report methods such as implicit association tasks should be used to determine whether automatic associations differ from reported bias. Finally, investigating relations between assessed attitudes and discriminatory behavior is a logical next step.

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Appendix A

Table 1

Means, Standard Deviations, and Correlations among Study Variables

Variable	*M*	*SD*	1	2	3	4	5
1. AQ	77.58	19.61	-				
2. PEMD	2.32	2.43	-.14*	-			
3. LOCR	3.97	2.35	-.11	.54**	-		
4. LOCM	2.65	1.93	-.16**	.19**	.41**	-	
5. LEC	2.64	2.57	-.15*	.25**	.39**	.32**	-

Note. N = 301. AQ = Attribution Questionnaire; PEMD = Personal Experience with Mental Disorder; LOCR = Level of Contact Report; LOCM = Level of Contact with Military; LEC = Life Events Checklist. * $p < .05$. ** $p < .01$.

Table 2

Analysis of Covariance for Stigmatizing Attitudes by Diagnostic Label/Attribution Condition

Source	*SS*	*df*	*MS*	*F*	*p*
PEMD	1203.53	1	1203.53	3.45	.06
LOCM	1186.25	1	1186.25	3.40	.07
LEC	693.62	1	693.62	1.99	.16
Condition	6987.02	3	2329.01	6.67	.00
Error	98085.30	281	349.06		
Total	1843872.00	288			

Note. PEMD = Personal Experience with Mental Disorder; LOCM = Level of Contact with Military; LEC = Life Events Checklist.

Table 3

Pairwise Post-Hoc Adjusted Mean Contrasts for AQ by Condition

Group	*M*	Adjusted *M*	1.	2.	3.	4.
1. PTSD/psych	79.27	78.53	-			
2. PTSD/bio	74.44	75.38	-3.15	-		
3. TBI/bio	71.44	71.30	-7.23	-4.10	-	
4. None	85.30	85.10	6.56	9.72*	13.79**	-

Note. AQ = Attribution Questionnaire. * $p < .05$. ** $p < .01$.

Table 4

Multivariate Analysis of Covariance for Stigmatizing Attitude Subscales by Diagnostic Label/Attribution Condition

| Source	Dependent Variable	SS	df	MS	F	p
Corrected Model	Personal Responsibility	1126.26	7	160.89	9.87	< .001
	Pity	1561.11	7	223.02	7.04	< .001
	Anger	675.87	7	96.55	4.43	< .001
	Fear	1178.00	7	168.29	2.93	.006
	Helping	2013.75	7	287.68	6.16	< .001
	Coercion-Segregation	1018.04	7	145.43	3.83	.001
Error	Personal Responsibility	4565.96	280	16.31		
	Pity	8873.11	280	31.69		
	Anger	6101.63	280	21.79		
	Fear	16067.75	280	57.39		
	Helping	13074.47	280	46.70		
	Coercion-Segregation	10645.74	280	38.02		
Total	Personal Responsibility	14771.00	288			
	Pity	122417.00	288			
	Anger	19102.00	288			
	Fear	82617.00	288			
	Helping	123317.00	288			
	Coercion-Segregation	48294.00	288			
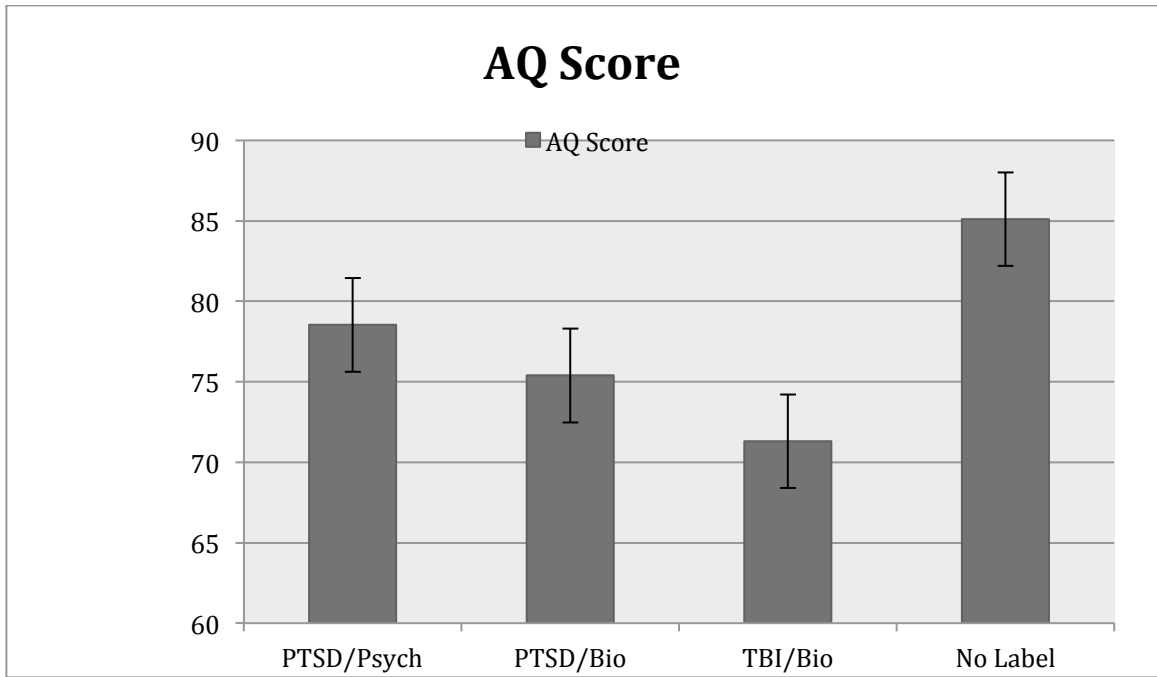
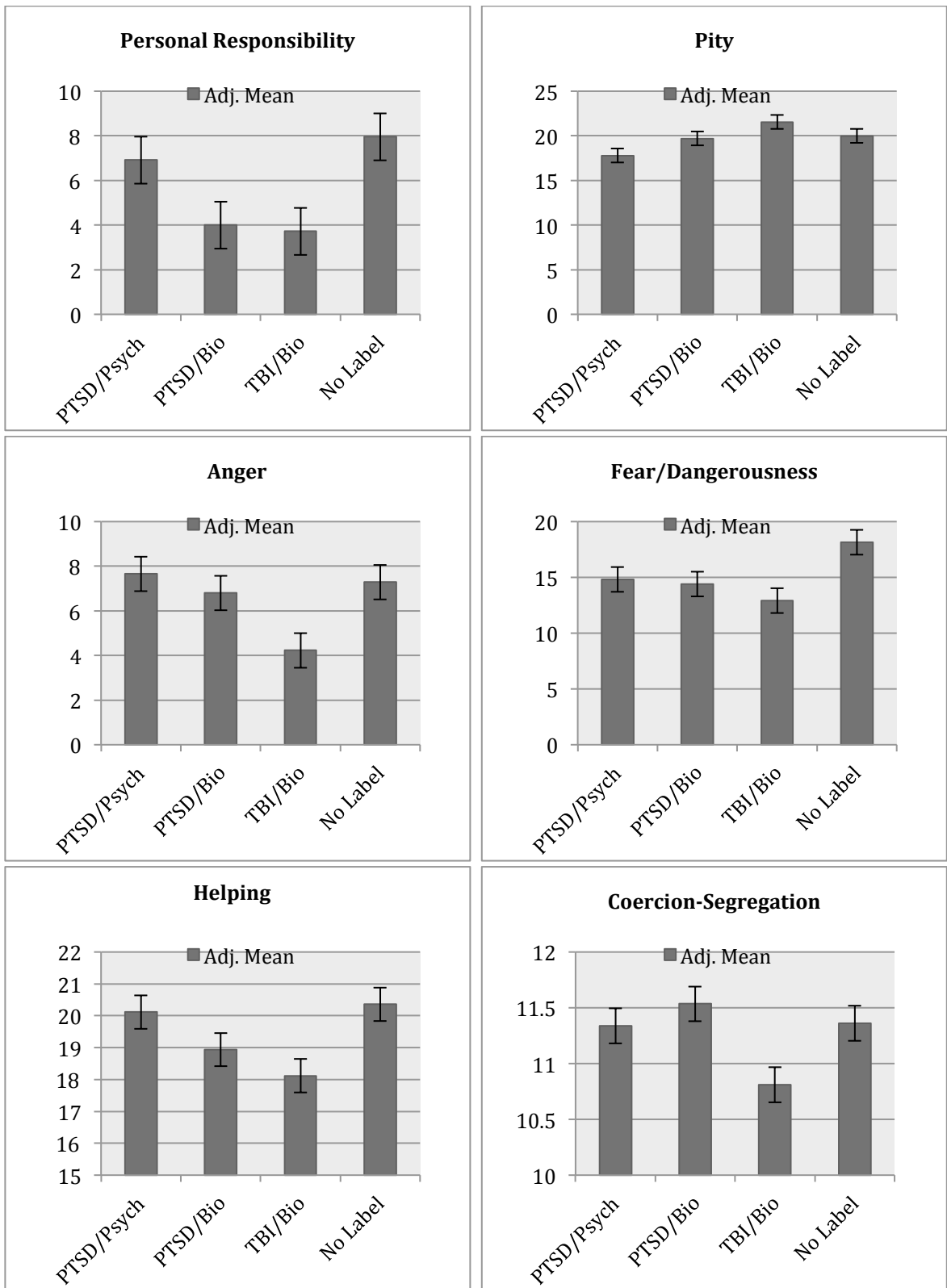*Figure 1.* Means for stigmatizing attitudes by diagnostic label/attribution condition.

Figure 2. Adjusted means for stigmatizing attitudes subscales.

Appendix B

The Attribution Questionnaire

[Note that items refer to "John," the fictional character described in the vignettes]

Personal Responsibility Beliefs

1. I would think that it were John's own fault that he is in the present condition. (1 = no, not at all; 9 = yes, absolutely so).

2. How controllable, do you think, is the cause of John's present condition? (1 = not at all under personal control; 9 = completely under personal control).

3. How responsible, do you think, is John for his present condition? (1 = not at all responsible; 9 = very much responsible).

Pity

1. I would feel pity for John. (1 = none at all; 9 = very much).

2. How much sympathy would you feel for John? (1 = none at all; 9 = very much).

3. How much concern would you feel for John? (1 = none at all; 9 = very much).

Anger

1. I would feel aggravated by John. (1 = not at all; 9 = very much).

2. How angry would you feel at John? (1 = not at all; 9 = very much).

3. How irritated would you feel by John? (1 = not at all; 9 = very much).

Fear

1. How dangerous would you feel John is? (1 = not at all; 9 = very much).

2. I would feel threatened by John? (1 = no, not at all; 9 = yes, very much).

3. How scared of John would you feel? (1 = not at all; 9 = very much).

4. How frightened of John would you feel? (1 = not at all; 9 = very much).

Helping

1. If I were an employer, I would interview John for a job. (1 = not likely; 9 = very likely).

2. I would share a car pool with John each day. (1 = not likely; 9 = very likely).

3. How certain would you feel that you would help John? (1 = not at all certain; 9 = absolutely certain).

4. If I were a landlord, I would probably rent an apartment to John. (1 = not likely; 9 = very likely).

Coercion-Segregation

1. I think John poses a risk to his neighbors unless he is hospitalized. (1 = not at all; 9 = very much).

2. I think it would be best for John's community if he were put away in a psychiatric hospital (1 = not at all; 9 = very much).

3. How much do you think an asylum, where John can be kept away from his neighbors, is best? (1 = not at all; 9 = very much).

4. If I were in charge of John's treatment, I would force him to live in a group home. (1 = not at all; 9 = very much).

The Level of Contact Report

Please read each of the following statements carefully. After you have read all the statements below, place a check by any of the statements that best depict your familiarity with persons with a mental illness. Note that the term "mental illness" can refer to a range of disorders, for example from anxiety and depression to schizophrenia and bipolar disorder.

[Note that the rank score is shown here in brackets and will not be included in the final questionnaire.]

☐ I have watched a movie or television show in which a character depicted a person with mental illness. [3]

☐ My job involves providing services/treatment for persons with a mental illness. [8]

☐ I have observed, in passing, a person I believe may have had a mental illness. [2]

☐ I have observed persons with a mental illness on a frequent basis. [5]

☐ I have a mental illness. [12]

☐ I have worked with a person who had a mental illness at my place of employment. [6]

☐ I have never observed a person that I was aware had a mental illness. [1]

☐ My job includes providing services to persons with mental illness. [7]

☐ A friend of the family has a mental illness. [9]

☐ I have a relative who has a mental illness. [10]

☐ I have watched a documentary on the television about mental illness. [4]

☐ I live with a person who has a mental illness. [11]

The Live Events Checklist

Listed below are a number of difficult or stressful things that sometimes happen to people. For each event check one or more of the boxes to the right to indicate that: (a) it *happened to you* personally, (b) you *witnessed it* happen to someone else, (c) you *learned about it* happening to someone close to you, (d) you're *not sure* if it fits, or (e) it *doesn't apply* to you.

Be sure to consider your *entire life* (growing up as well as adulthood) as you go through the list of events.

Event	Happened to me	Witnessed it	Learned about it	Not sure	Doesn't apply
1. Natural disaster (for example, flood, hurricane, tornado, earthquake)					
2. Fire or explosion					
3. Transportation accident (for example, car accident, boat accident, train wreck, plane crash)					
4. Serious accident at work, home, or during recreational activity					
5. Exposure to toxic substance					

Event	Happened to me	Witnessed it	Learned about it	Not sure	Doesn't apply
(for example, dangerous chemicals, radiation)					
6. Physical assault (for example, being attacked, hit, slapped, kicked, beaten up)					
7. Assault with a weapon (for example, being shot, stabbed, threatened with a knife, gun, bomb)					
8. Sexual assault (rape, attempted rape, made to perform any type of sexual act through force or threat of harm)					
9. Other unwanted or uncomfortable sexual experience					
10. Combat or exposure to a war-zone (in the military or as a civilian)					

Event	Happened to me	Witnessed it	Learned about it	Not sure	Doesn't apply
11. Captivity (for example, being kidnapped, abducted, held hostage, prisoner of war)					
12. Life-threatening illness or injury					
13. Severe human suffering					
14. Sudden, violent death (for example, homicide, suicide)					
15. Sudden, unexpected death of someone close to you					
16. Serious injury, harm, or death you caused to someone else					
17. Any other very stressful event or experience					

Personal Experience with Mental Disorder

Please read each of the following statements carefully. After you have read all the

statements below, place a check by any of the statements that best depict your personal

experience with mental illness. Be sure to check any item that has *ever* applied to you

(for example, if you have been prescribed a medication for a mental illness in the past,

but are not taking it now, please check the item asking about medication).

☐ I have never had any mental illness symptoms like anxiety or depression.

☐ I have seen a religious or spiritual counselor or advisor for help with a mental
illness.

☐ My doctor has suggested an antidepressant or other medication to treat mental
health symptoms.

☐ I have seen a psychiatrist for help with a mental illness.

☐ I have seen a therapist or counselor for help with a mental illness.

☐ I believe I have a mental illness but have not talked to anyone about it.

☐ I have thought about seeing a therapist or counselor for help with a mental illness.

☐ I have had mental illness symptoms like anxiety or depression, but they were very
brief and went away on their own.

☐ My doctor has prescribed an antidepressant or other medication to treat mental
health symptoms.

☐ I have had mental illness symptoms like anxiety or depression, and they did not
go away on their own.

☐ I believe I have a mental illness and have talked to a health care provider or
therapist about it.

☐ I have been diagnosed with a mental illness by a doctor, psychologist, nurse, therapist, or another health care provider.

☐ Friends or family have told me they believe I have a mental illness.

☐ I believe I have a mental illness and have talked to a friend about it.

Level of Experience with Military

Please read each of the following statements carefully. After you have read all the statements below, place a check by any of the statements that best depict your personal experience with the military. Be sure to check any item that has *ever* applied to you (for example, if you had served in the military in the past, but are not currently active, please check the item saying "I have served in the military")

☐ I have never seen a movie or television show with a military theme, or have not seen coverage of military events on television.

☐ I enjoy movies or television shows with a military theme, or actively keep up on news about military actions.

☐ I have a friend that has served in the military during peacetime or outside of a combat situation.

☐ I have a friend that has served in the military and was involved in combat.

☐ I have a family member that has served in the military during peacetime or outside of a combat situation.

☐ I have a family member that has served in the military and was involved in combat.

☐ I would like to join a branch of the military one day.

☐ I would like or am working toward a military career.

☐ I served in the military during peacetime or outside of a combat situation.

☐ I served in the military and was involved in combat.

☐ I served or currently serve in the military and plan a military career in the future.

THE UNIVERSITY OF MEMPHIS

Institutional Review Board

To: Jason Jacob-Lentz
                       Psychology

From: Chair, Institutional Review Board
                       For the Protection of Human Subjects
                       irb@memphis.edu

Subject: Attitudes about Problems Related to Trauma (#2478)

Approval Date: December 10, 2012

This is to notify you of the board approval of the above referenced protocol. This project was reviewed at the expedited level in accordance with all applicable statuses and regulations as well as ethical principles.

Approval of this project is given with the following obligations:
1. At the end of one year from the approval date, an approved renewal must be in effect to continue the project. If approval is not obtained, the human consent form is no longer valid and accrual of new subjects must stop.
2. When the project is finished or terminated, the attached form must be completed and sent to the board.
3. No change may be made in the approved protocol without board approval, except where necessary to eliminate apparent immediate hazards or threats to subjects. Such changes must be reported promptly to the board to obtain approval.
4. The stamped, approved human subjects consent form must be used unless your consent is electronic. Electronic consents may not be used after the approval expires. Photocopies of the form may be made.

This approval expires one year from the date above, and must be renewed prior to that date if the study is ongoing.

_____
Chair, Institutional Review Board
The University of Memphis

Cc: Dr. Meghan McDevitt-Murphy