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14. ABSTRACT: The present report provides a summary of fourth year activities for the four-year project. Key accomplishments include completing the final version of the "Facilitating Mental Health Treatment (FMHT)" unit and leader training, gaining Institutional Review Board (and MRMC Oversight approval) approval for the unit training study, and coordinating with unit commanders to schedule the first phase of the unit training study. In addition, we have pilot tested the Implicit Association Test to assess implicit attitudes toward mental health treatment among an undergraduate sample. Two empirical articles based on the research supported by the grant have been submitted and received a recommendation to revise and resubmit, and an additional manuscript has been submitted for publication. Key activities for the next quarter are conducting the first phase of the unit training among the two battalions that have been assigned to participate in the study.					
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Table of Contents

	<u>Page</u>
1. Introduction.....	4
2. Keywords.....	4
3. Overall Project Summary.....	4
4. Key Research Accomplishments.....	5-6
5. Conclusion.....	6
6. Publications, Abstracts, and Presentations.....	29
7. Inventions, Patents and Licenses.....	30
8. Reportable Outcomes.....	30
9. Other Achievements.....	30
10. References.....	30
11. Appendices.....	35

1. **INTRODUCTION:** Narrative that briefly (one paragraph) describes the subject, purpose and scope of the research.

The studies being supported under the grant titled "Facilitating Soldier Receipt of Mental Health Treatment" are all designed to provide a better understanding of those factors that facilitate and hinder soldiers from getting treatment for mental health problems caused by exposure to traumatic events during combat. In the first year of the grant two qualitative studies were conducted, one with focus groups of soldiers of different rank regarding their perceptions of the determinants of treatment seeking, and the second involving interviews with soldiers who sought treatment while on active duty. In the second and third years of the grant a longitudinal study was conducted to examine the predictors of treatment seeking among military personnel. The fourth and fifth years of the grant involved developing unit and leader training to improve the climate associated with soldiers getting mental health treatment, and evaluating the training.

2. **KEYWORDS:** Provide a brief list of keywords (limit to 20 words).

Barriers, Facilitators, Military Personnel, Treatment Seeking, Unit Climate, Stigma, Attitudes Toward Mental Health Treatment

3. **ACCOMPLISHMENTS:** The PI is reminded that the recipient organization is required to obtain prior written approval from the awarding agency Grants Officer whenever there are significant changes in the project or its direction.

What were the major goals of the project?

List the major goals of the project as stated in the approved SOW. If the application listed milestones/target dates for important activities or phases of the project, identify these dates and show actual completion dates or the percentage of completion.

Goals for Year 1

1. Conduct 40-50 interviews of Soldiers who have sought treatment for psychological problems. Status: Conducted 32 interviews with soldiers who sought mental health treatment. As indicated in prior reports, information saturation was achieved with 32 interviews in terms of novel responses to the different questions.
2. Conduct 12 focus groups with Soldiers of different rank to address their perceptions of the facilitators and barriers facing Soldiers in need of mental health treatment. Status: 12 focus groups were conducted and processed.

Goals for Year 2

1. Based on the qualitative studies in Year 1, develop a comprehensive measurement tool to assess the determinants of treatment seeking. Status: This measurement tool was developed.
2. Conduct a longitudinal assessment using the measurement tool to examine the predictors of treatment seeking among a Brigade of Soldiers. Status: This longitudinal study, with 1,911 Soldiers at Time 1, and N = 1,652 at Time 2, was conducted.

Goals for Year 3

1. Develop and evaluate the effectiveness of unit training designed to increase supportive behaviors toward fellow Soldiers experiencing mental health problems. Status: The 2-hour unit training was developed and evaluated using Squads from two Battalions from an Infantry Brigade.

Goals for 12 Month-Extension and Supplement

1. Develop specific leader training for improving the unit climate of support for treatment seeking. Status: This 2-hour training was developed.
2. Develop an Implicit Association Test to indirectly assess Soldier attitudes toward mental health treatment. Status: This test was developed and administered at the training post-test assessment.

For this reporting period describe: 1) major activities; 2) specific objectives; 3) significant results or key outcomes, including major findings, developments, or conclusions (both positive and negative); and/or 4) other achievements. Include a discussion of stated goals not met. Description shall include pertinent data and graphs in sufficient detail to explain any significant results achieved. A succinct description of the methodology used shall be provided. As the project progresses to completion, the emphasis in reporting in this section should shift from reporting activities to reporting accomplishments.

In discussing the key accomplishments for the five years of the grant, the results are organized as a function of the studies that were conducted as part of the grant. These studies included the interview and focus group studies, the quantitative longitudinal study examining the predictors of treatment seeking, and the group-randomized trial assessing the effectiveness of the training to increase supportive behaviors toward unit members experiencing mental health problems. Publications based on the studies are referenced where appropriate, and all publications are attached as Appendices.

Qualitative Studies: Individual Soldier Interviews and Focus Groups

Article 1: Barriers and Facilitators of Treatment Seeking Among Active Duty Personnel

An article published by Zinzow, Britt, Pury, Raymond, McFadden, and Burnette (2013) in *Military Psychology* utilized the results from the Year 1 focus group study and interview study to comprehensively identify the barriers and facilitators of mental health treatment-seeking among active duty service members. The article is included in the Appendix. For Sample 1, focus groups were conducted with a general sample ($n = 78$) of United States soldiers. For Sample 2, interviews were conducted with soldiers who had sought mental health treatment ($n = 32$). Transcripts were coded using Atlas.ti software, and descriptive analyses identified key themes. Table 1 of the article describes the barriers and facilitators that were identified in the focus group study, and Table 2 below describes the barriers and facilitators that were identified in the interview study.

Factors identified by this study that have been under-investigated in previous research included medication concerns, discomfort with discussing mental health problems, beliefs promoted by military culture, positive leader behaviors, and witnessing treatment seekers' experiences. Common barriers included career concerns, stigma, treatment concerns, leadership problems, and practical barriers. Common facilitators included social support, leadership support, and perceived symptom severity. The findings suggest that treatment-facilitating interventions should reframe treatment-inhibiting perceptions, change leader behaviors, and employ testimonials. These findings were used to develop the Determinants of Treatment Seeking Checklist that was administered in the quantitative study described in the next section.

Article 2: Blended Courage: Moral and Psychological Courage Elements in Mental Health Treatment Seeking by Active Duty Military Personnel

An article published by Pury, Britt, Zinzow, and Raymond (2014) in the *Journal of Positive Psychology* analyzed the data from the Year 1 study of interviews with Soldiers who

sought treatment while on active duty to highlight how seeking treatment combines elements of psychological (facing inner distress) and moral (confronting potential negative reactions from others) courage. The article is included in the Appendix. Interviews of 32 active duty US Army personnel about their process of seeking current mental health care were analyzed for themes of voluntary action, personal risk, and noble or worthwhile goals (benefits). Risks and benefits were divided into internal risks and benefits, characteristic of psychological courage, and external risks and benefits, characteristic of moral courage. Concerns about external risks were themes in all narratives, while concerns about internal risks were themes in only about half of narratives. Both internal and external benefits of treatment were themes in approximately three-quarters of the narratives, whereas doubts about internal (but not external) benefits were also expressed at a similar rate. Thus, participants described an act of blended courage, with social risks of moral courage taken for wellness goals of psychological courage. Table 1 in the Article contains the risks Soldiers perceived facing with getting mental health treatment. The fact that Soldiers sought treatment in the face of these risks highlights treatment seeking as an act of blended courage.

Article 3: Soldier Recommendations for Improving Mental Health Treatment Seeking in the Military

An article in press by Cheung, Britt, Raymond, Pury, and Zinzow, and Raymond (2014) in the *Military Behavioral Health* journal utilized the results from the Year 1 focus group study and interview study to comprehensively identify the recommendations soldiers had for improving the likelihood fellow soldiers would get needed mental health treatment. The manuscript is included in the Appendix. The manuscript summarizes soldier recommendations for actions that can be taken by fellow soldiers who are experiencing mental health problems, their peers, their leaders, and the upper-level chain of command to facilitate mental health treatment-seeking. In addition, the manuscript addresses recommendations to raise awareness, reduce stigma, and improve attitudes toward mental health treatment. The recommendations are summarized in Tables 1-4 of the manuscript. The recommendations with the greatest percentage of endorsement included the importance of peer support and the development of a buddy system for soldiers experiencing mental health problems, the importance of leaders supporting soldiers needing treatment and remaining in treatment, the importance of leaders proactively reaching out to soldiers in need of help, increasing the availability and accessibility of mental health providers, and increasing the amount of communication and outreach regarding the availability of services for soldiers experiencing mental health problems.

Quantitative Study: Determinants of Soldier Treatment Seeking

Article 1: Determinants of Mental Health Treatment Seeking among Soldiers who Recognize They have a Problem

An article submitted for publication by Britt, Jennings, Cheung, Pury, Zinzow, Raymond, and McFadden to the journal *Work & Stress* utilized the results from the Time 1 assessment of the longitudinal study to examine the factors that distinguished soldiers who reported having a current mental health problem and had either not sought treatment, considered seeking treatment, or sought treatment. That manuscript is included in the Appendix. The manuscript first describes

the comprehensive determinants of treatment seeking checklist, and a confirmatory factor analysis supporting the underlying factor structure of the measure (see Table 1). Support is obtained for nine different factors underlying the items: career-related stigma (e.g., "Getting mental health treatment would hurt my chances of getting promoted"), differential treatment stigma (e.g., "Fellow unit members would treat me differently if I received mental health treatment"), social support for treatment seeking (e.g., "Friends and family would encourage me to go get mental health treatment if I needed it"), operational barriers (e.g., "I would have to wait too long to get an initial appointment with a mental health provider"), positive views of treatment (e.g., "Mental health treatments work"), negative views toward mental health treatment (e.g., "Mental health treatment would not treat my main problems"), concerns with the use of medication to treat mental health problems (e.g., "The medications prescribed by mental health providers are usually addictive"), stigmatizing beliefs of others who get treatment (e.g., "I would have less confidence in a unit member who had received mental health treatment"), and self-reliance (e.g., "I prefer to handle problems myself as opposed to seek mental health treatment").

In addition to providing support for the factor structure of the measure, findings revealed multiple determinants as predictors of whether soldiers recognizing a current mental health problem had not sought treatment, had considered getting treatment, or had received treatment. Table 3 of the manuscript highlights these results. In terms of distinguishing between soldiers who had not sought treatment versus those who were considering treatment, those soldiers reporting lower self-reliance and more positive views toward treatment were more likely to consider getting mental health treatment. In terms of distinguishing between soldiers considering treatment and actually receiving treatment, lower operational barriers and lower self-reliance were associated with a greater likelihood of treatment. These results support the utility of the Stages of Change Model (Prochaska & DiClemente, 1982) in understanding the stages soldiers may go through in deciding to get mental health treatment.

Article 2: Barriers and Facilitators of Mental Health Treatment-Seeking in Active Duty Soldiers with Sexual Assault Histories

An article published by Zinzow, Britt, Pury, Jennings, Cheung, & Raymond in the *Journal of Traumatic Stress* utilized the results from the Time 1 assessment of the longitudinal study to examine the factors that distinguished soldiers with a history of sexual assault who had received or not received mental health treatment. This article is included in the Appendix. As seen in Table 5 of the manuscript, a number of predictors were associated with sexual assault victims receiving mental health treatment, including social support for treatment seeking, positive beliefs about treatment, a lack of preference for self-reliance in dealing with problems, and a lack of stigmatizing beliefs towards fellow soldiers who receive mental health treatment. Zinzow et al., (2015) recommend that treatment-facilitating interventions among sexual assault victims focus on improving recognition of mental health symptoms that may require treatment, address when self-reliance to deal with problems is adaptive versus maladaptive, and reducing the stigma others have toward soldiers who seek treatment. The authors recommended interventions that increase unit support for fellow soldiers getting treatment.

Article 3: The Role of Different Stigma Perceptions in Treatment Seeking and Dropout Among Active Duty Military Personnel

An article published by Britt, Jennings, Cheung, Pury, and Zinzow (2015) in the *Psychiatric Rehabilitation Journal (Special Issue: Self-Stigma and Mental Illness)* utilized the results from the Time 2 assessment of the longitudinal study to examine how different types of stigma are related to treatment seeking and dropout among soldiers. This article is included in the Appendix. As discussed above, one finding from the Time 1 analysis of the quantitative study was that the perceived stigma measure was actually best represented by two factors, career-related stigma and differential treatment stigma. In addition, a factor in the Time 1 assessment also addressed stigmatizing perceptions of soldiers who seek treatment. Finally, in the Time 2 assessment we also included an abbreviated version of Vogel and Wade's (2006) measure of self-stigma associated with seeking mental health treatment. The four stigma perceptions were examined as correlates of treatment seeking and dropout after controlling type of mental health problem and functional impairment.

The results indicated that all four stigma perceptions distinguished soldiers who sought treatment from those who did not. When all four perceptions were entered as predictors of treatment seeking, only stigmatizing perceptions of others who seek treatment were related to treatment seeking. These results indicate that negative beliefs about those who get treatment may deter treatment seeking when soldiers develop mental health problems. In terms of dropping out of mental health treatment, career-related stigma, differential treatment, and self-stigma were each related to an increased probability of dropping out of mental health treatment. When all three stigma perceptions were included in the same model, only self-stigma emerged as a significant predictor, indicating the importance of self-stigma for treatment retention.

Article 4: Correlates and Reasons for Mental Health Treatment Dropout among Active Duty Soldiers

An article by Jennings, Zinzow, Britt, and Pury (2015) was submitted for publication to *Psychological Services*. This article is included in the Appendix. The findings in this manuscript were based on the Time 2 data from the longitudinal study, and included a more thorough analysis of the predictors of dropping out of mental health treatment, and an analysis of the reasons soldiers gave for dropping out of treatment.

A series of logistic regressions revealed that posttraumatic stress disorder symptoms, depression symptoms, functional impairment, career stigma, differential treatment stigma, practical barriers, negative beliefs about treatment, and self-reliance were associated with an increased likelihood of dropout. Positive beliefs about treatment were associated with a decreased likelihood of dropout. Functional impairment, career stigma, and self-reliance remained unique predictors in a final forward conditional regression. These findings highlight the need for interventions to support soldiers in treatment by educating them on the benefits of treatment and reducing practical barriers.

Additional Findings from the Quantitative Study

The majority of findings from the longitudinal study have been written up for publication and are included in the manuscripts in the Appendix. One area missing from these manuscripts is

the finding of which determinants at Time 1 were related to treatment seeking at Time 2. These analyses were conducted with the 486 participants who provided data at Time 1 and Time 2, and who consented at both time periods for their responses to be utilized for research purposes. The primary finding from the longitudinal component of the study was that self-reliance at Time 1 predicted a reduced probability of treatment seeking at Time 2. These results are consistent with recently published research by Adler, Britt, Kim, Riviere, and Thomas (2015), who also found that a preference for self-management at Time 1 was a predictor of a reduced probability of seeking treatment at Time 2. In the Adler et al. (2015) study, the time between the two assessments was 12 months. In the present study, the time period between the two assessments was five months. Therefore, soldiers who prefer to manage problems themselves fail to receive treatment for identified mental health problems irrespective of whether the time between the assessments is five months or 12 months.

Unit and Leader Training Study

Overview

A manuscript is currently in development addressing the key components of the unit training study. Therefore, detail is provided in this section on the content and evaluation of the unit and leader training. Importantly, the unit and leader training were developed in accordance with the information obtained from the two qualitative studies and the quantitative study conducted in support of the grant. In addition, we followed recommendations from the broader literature on reducing stigma and improving mental health awareness, including the use of video testimonials from soldiers receiving treatment while on active duty (Corrigan, 2012; Kitchener & Jorm, 2004; Pinfold, et al., 2005). We also followed guidelines from the broader training literature on how to provide information to improve knowledge and attitudes towards individuals with mental health problems and the use of role-playing to allow soldiers to practice skills associated with helping others (Saks & Haccoun, 2004). As indicated in prior technical reports, the unit and leader training were evaluated by behavioral scientists at the Walter Reed Army Institute of Research, ROTC Cadre at Clemson University, and senior NCOs who were assigned to the 3rd Infantry Division at Fort Stewart, Georgia. Given the importance of leaders in the mental health of employees (Britt, Davison, Bliese, & Castro, 2004; Kelloway, Turner, Barling, & Loughlin, 2012), we modified the training for leaders of the units, covering much of the same information as the main unit training, but highlighting how leaders set the climate within the unit for supporting soldiers who need treatment.

Finally, we recognized that in focusing the training on helping fellow unit members with mental health problems, soldiers themselves would likely benefit from the training. Siegel, Lienemann, and Tan (2015) recently demonstrated that individuals showing symptoms of depression who heard a persuasive message regarding the importance of a close other getting treatment for depression expressed more positive attitudes toward treatment and greater intentions to get treatment than those depressed individuals who received a direct message to get treatment. Therefore, we hypothesized that the unit training would not only result in increased supportive behaviors to other unit members, but that soldiers would also be more likely to report getting mental health treatment themselves. In evaluating the effectiveness of training, we followed guidelines in the training literature, assessing evaluations of the training itself,

knowledge of mental health issues, attitudes toward mental health treatment, barriers against treatment, confidence or self-efficacy in helping fellow soldiers with mental health problems, and reports of specific supportive behaviors toward fellow soldiers in need of help.

Method

Participants and Design

A total of 349 active duty U.S. Army soldiers ($N = 272$) and squad/section leaders ($N = 77$) from 61 squads/sections in two battalions from an Infantry Brigade participated in the study at the baseline assessment. The participants were evenly split between the 2 battalions (50% each). Participants were randomly assigned by squad to either the training or survey-only control conditions, with 51% ($n = 179$) of the participants being assigned to the training condition, and 49% ($n = 170$) being assigned to the survey-only control condition. Soldiers from up to five squads participated in a given training session, and soldiers from up to six squads participated in a single survey-only control session. The majority of the sample was male (84%), with an average age of 26.36 ($SD = 6.36$). Soldiers had been in the military for an average of 4.74 years ($SD = 5.22$). The majority of participants were White (51%), followed by African American (25%). Almost all of the participants were either junior enlisted (E1-E4, $n = 247$, 71%) or noncommissioned officers (E5-E7, $n = 98$, 28%).

Three months later, 270 soldiers participated in the follow-up assessment, among which 112 (84 unit members, 28 leaders) were matched with the baseline assessment. Analyses were conducted to examine potential differences between the matched sample and those individuals who completed the baseline assessment, but did not complete the three-month follow-up assessment. Demographic comparisons using chi-square tests of independence revealed no differences in the composition of the matched sample compared to those who did not participate in the follow-up assessment in terms of gender, $\chi^2(1) = .17$, $p > .05$; rank, $\chi^2(3) = 2.86$, $p > .05$; or ethnicity, $\chi^2(4) = 2.24$, $p > .05$. A one-way ANOVA also revealed no difference in age, $F(1, 346) = .36$, $p > .05$.

Procedure

In all of the sessions described below, at least one investigator, one graduate student and one ombudsman were present at each session. The investigators briefed the soldiers in the beginning of all sessions on the purpose of the study and soldiers were given an informational letter about the project. Soldiers were given an option on all of the surveys whether they agreed to have their responses used for research purposes. Soldiers could also choose not to respond to any of the survey questions. Only responses from consenters were included in the current study analyses.

Unit training. Soldiers were asked to complete a 30-minute baseline survey assessment before the training began. The title of the training was 'Creating a supportive climate for soldiers who need help.' The objectives were to encourage soldiers to be more supportive of others toward treatment-seeking by understanding: (1) the common symptoms of mental health concerns and when a problem needs to be addressed, (2) the benefits of getting help for mental

health problems, (3) the barriers and facilitators of treatment-seeking, (4) what happens during treatment and providing accurate information about the use of medication, (5) how unit climate can affect a soldier's decision to seek help, and (6) actions peers can take to help fellow soldiers get help.

Each training session lasted approximately 2 hours, with a 10-minute break at approximately the halfway point. There were no PowerPoint slides; the training was designed to be discussion-oriented and interactive, soldiers were strongly encouraged to speak and ask questions. Handouts highlighting the important messages from the training session were provided to soldiers for their future reference. The handout booklet also included exercises to encourage soldiers to think and reflect during the training.

Six videos documenting interviews with treatment-seekers, leaders, and mental health professionals were also presented throughout the training sessions. The videos highlighted several messages, including the recognition of mental health symptoms, benefits of treatment, barriers soldiers experienced, the nature of mental health treatment, how to support soldiers who need treatment, and the importance of fellow soldiers facilitating treatment. Other than highlighting the benefits of treatment, the training emphasized looking out for battle buddies, the responsibilities of peers to recognize mental health symptoms among their unit members, and ways in which soldiers can contribute to a more positive unit climate that is supportive of treatment-seeking.

After the training was completed, soldiers were asked to complete the post-training assessment that took approximately 15 minutes. The immediate post-training assessment was a shorter version of the baseline survey.

Leader training. The squad leaders received separate leader training, which was procedurally similar to the unit training described above. Squad leaders were first asked to complete a 30-minute baseline survey assessment before the training started. The leader training had the same primary objectives as the unit training, which aimed to promote supportive behaviors of leaders in helping soldiers seek needed treatment. The main difference of the leader training was that it highlighted the important role played not only by the unit, but also by the leaders themselves in creating a supportive climate for soldiers getting help. Similar to the unit training, the leader training was designed to be discussion-oriented and interactive. Eight videos documenting interviews with treatment-seekers and mental health professionals were presented throughout the training sessions. Four of the videos were the same as the ones presented at the unit training. The rest of the videos emphasized on the role of leaders in getting soldiers into treatment.

The training sessions each lasted about 2 hours (including a 10-minute break) and ended with a goal-setting exercise. Leaders were asked to come up with three specific actions they can take to reach the goal of improving the climate within their units for soldiers seeking help. After the training was completed, leaders were asked to complete the immediate post-training assessment that took approximately 15 minutes. The immediate post-training assessment was a shorter version of the baseline survey.

Control Group. Those soldiers in the survey-only control group completed the same baseline survey as those in the training condition. Participants assigned to the survey-only control group were asked to complete a 30-minute survey that was used to design training materials to facilitate soldiers in seeking the treatment that they need. Squad leaders were given the same baseline survey as those in the training group. The survey-only control group participants only completed the baseline assessment, and not the immediate post-training assessment.

Follow-up assessment. Three months after the training phase was concluded, soldiers from the same 2 battalions were recruited to participate in the follow-up assessment. This 30-minute survey was the same as the baseline survey. Participants in the follow-up sessions may not have necessarily been assigned to the training or control group during the training phase. Additionally, soldiers assigned to either the training and survey-only control groups were not separated by their study conditions and they received the same follow-up survey.

Upon completion of the follow-up survey, soldiers also completed a 5-minute computerized implicit attitudes tests (IAT) evaluating their implicit perceptions toward mental health treatment. On opposite sides of the computer screen, the IAT presented two focal categories: (1) mental health treatment and (2) medical treatment, each of these was paired with either a positive or negative term (i.e., good vs. bad and effective vs. ineffective). When an attribute (e.g., great) appeared in the middle of the screen, soldiers were asked to categorize the attributes into the appropriate categories. The IAT records response time (in milliseconds) for correct categorizations. A longer response time would suggest implicit bias in cases where two terms (e.g., mental health treatment and effective) were less automatically associated by participants. The IAT software computes GNB scores for each participant (Greenwald, Noesk, & Banji, 2003), which is a measure of bias based on the differences in response time between trials focusing on mental health treatment and those focusing on medical treatment. A positive score would indicate more bias toward mental health treatment.

Measures: Baseline and 3-month Follow-up

Determinants of treatment-seeking. The factors that might influence soldiers to seek mental health treatment were measured using a 31-item scale that was developed based on prior studies on the determinants of treatment-seeking among military personnel (Adler et al., 2015; Britt et al., 2008; Hoge et al., 2004; Kim et al., 2011). These items assessed 7 determinant factors: (1) career stigma ($\alpha = .81$), (2) differential treatment stigma ($\alpha = .92$), (3) positive attitudes toward treatment ($\alpha = .78$), (4) negative attitudes toward treatment ($\alpha = .79$), (5) negative beliefs about medications ($\alpha = .77$), (6) stigmatizing beliefs about others ($\alpha = .77$), and (7) preferences for self-reliance ($\alpha = .76$). Sample items include: "Getting mental health treatment would hurt my chances of getting promoted" and "Mental health professionals don't understand the military environment and experiences." All items were rated on a 5-point agreement scale.

Knowledge about mental health problems. Nine knowledge multiple-choice items were used to measure soldiers' knowledge about mental health issues and treatment pre- and post-training and at the follow-up assessment 3 months later. A sample knowledge item was "Among soldiers with mental health problems, what proportion seek treatment?" Respondents

were provided 4 response options for each knowledge item, and the number of correct responses was summed to compute their knowledge scores.

Confidence in helping fellow soldiers ($\alpha = .90$). Five items were used to assess the extent to which soldiers felt confident toward helping soldiers with mental health concerns. Sample items include "I will be able to overcome the challenges associated with helping a fellow Soldier get mental health treatment" and "I am confident that I can effectively help a fellow Soldier get mental health treatment if needed." These items were rated on a 5-point agreement scale.

Supportive unit behaviors. Five behavioral items were used to ask soldiers if they engaged in behaviors supporting fellow soldiers with mental health concerns. Respondents answered either "yes" (1) or "no" (0) to items such as "In the past 3 months, did you offer assistance to a soldier who was struggling with mental health concerns?" and "In the past 3 months, did you provide support for a fellow soldier who was currently in treatment?"

Treatment-seeking. Treatment-seeking was measured in multiple ways in order to capture any attempt soldiers made to reach out to mental health professionals for mental health services. First, soldiers were asked if they were currently experiencing a stress, emotional, alcohol, or family problem. Those who responded yes were then asked "Have you sought treatment for this problem?" Response option was "yes" or "no". Second, soldiers were asked "In the past 3 months, did you receive mental health services (e.g., individual therapy, group therapy) for a stress, emotional, alcohol, or family problem from any of the following professionals?" Six different sources were listed, including mental health professional at a military or civilian facility, primary care/general medical doctor at a military or civilian facility, chaplain or spiritual advisor, and other sources. Response options were either "yes" or "no". Lastly, they were asked "In the past 3 months, how many visits did you attend for mental health problems?" Response options were "0", "1-2", "3-7", "8-12" and "more than 12".

Measures: Immediate Post-Training

The measures administered immediately after the training assessed an evaluation of the training and a re-assessment of those factors hypothesized to be influenced by the training. Training evaluation was assessed through eleven items that assessed soldier perceptions of the usefulness, effectiveness, and relevance of the training (e.g. "I found this training session to be useful"), and whether they learned specific behaviors relevant to the training (e.g. "I learned specific actions that I can take to encourage soldiers to seek help). The items were rated on a 7-point agreement scale.

The seven determinants of treatment seeking subscales described above were re-administered at a reduced length (23 items) to reduce participant fatigue. The retained items were chosen based on the highest item loadings from a confirmatory factor analysis conducted for scale validation and refinement purposes. In this abbreviated version, there were 3 to 5 items for each subscale. Lastly, the nine mental health knowledge questions from baseline survey were also re-administered immediately after the training.

Results

Responses on major study variables before and after the training, as well as at the three-month follow up were compared among the treatment and control groups. We first present preliminary analyses comparing the treatment and control groups to ensure relative equivalence of the groups prior to evaluations of the training. Next, we present changes in the treatment group immediately following the training in regards to the major study variables. Lastly, we present the results comparing the treatment and control group at the three-month follow up, as well as examining whether the changes in the treatment group remained over time at the three-month follow-up.

Baseline Differences between the Training and Survey-Only Control Groups

Prior to the analyses of training effectiveness, the training and control groups were compared in a series of analyses to ensure that the two groups were sufficiently similar in terms of demographic characteristics and major study variables. Demographic comparisons using chi-square tests of independence revealed no differences in the composition of the training and control groups in terms of gender, $\chi^2(1) = .15, p = .70$; rank, $\chi^2(3) = 3.89, p = .27$; or ethnicity, $\chi^2(4) = 2.31, p = .68$. A one-way ANOVA also revealed no significant difference in age, $F(2, 345) = 3.59, p = .06$.

In addition, a series of one-way ANOVAs revealed no differences in the major baseline study variables of supportive unit behaviors, $F(1, 346) = .05, p = .82$; intentions and confidence in helping a fellow soldier get treatment, $F(1, 347) = .00, p = .99$; or the unit climate toward treatment seeking, $F(1, 347) = .01, p = .91$. There were also no significant differences responses on the ten determinants of treatment-seeking: career stigma, $F(1, 348) = 2.08, p = .15$; differential treatment stigma, $F(1, 348) = .62, p = .43$; support for treatment-seeking, $F(1, 348) = .97, p = .33$; practical barriers, $F(1, 348) = .00, p = .99$; negative beliefs about treatment, $F(1, 348) = 1.52, p = .22$; positive beliefs about treatment, $F(1, 348) = .12, p = .73$; negative beliefs about medications, $F(1, 348) = 1.48, p = .23$; self-reliance, $F(1, 348) = .68, p = .41$; stigmatizing beliefs about others, $F(1, 348) = .81, p = .37$, and; awareness of treatment options, $F(1, 348) = .40, p = .52$. A chi-square test of independence also revealed no difference in the number of soldiers who had sought treatment between the training and control group, $\chi^2(1) = 1.43, p = .23$.

An initial examination of responses to the baseline survey revealed that soldiers reported high levels of confidence in helping fellow soldiers ($M = 4.21, SD = .63$, on a 1-5 scale). In contrast, soldiers reported few supportive behaviors toward other soldiers with mental health concerns, with a mean of 1.34 ($SD = 1.77$) supportive behaviors out of five possible behaviors provided.

Immediate Post-Training Assessment

Evaluations of the training. Responses to the immediate post-training survey showed that the training was well received by soldiers and leaders. Soldiers and leaders indicated that they generally understood the content, enjoyed the delivery methods, and found it applicable. The responses to specific evaluation items are presented in Table 1.

Table 1. Means and standard deviations of responses to items evaluating the training.

	Unit (N=136)		Leader (N= 30)	
	Mean	SD	Mean	SD
This training was relevant for Soldiers in my unit.	5.46	1.33	5.90	1.21
I found this training session to be useful.	5.58	1.26	5.77	1.41
I understood the information in this training session.	5.99	1.06	6.10	1.06
I liked the group exercises in this training session.	5.68	1.24	5.80	1.19
I liked the videos in the training.	5.82	1.12	5.47	1.25
This training session encouraged Soldiers (Leaders) to look out for one another.	5.77	1.13	5.97	1.19
I learned specific actions that I can take to encourage Soldiers to seek treatment.	5.78	1.14	5.93	1.17
I learned how to recognize when mental health problems require treatment.	5.59	1.24	5.63	1.35
My attitude toward mental health treatment was improved by this training.	5.53	1.25	5.63	1.50
My attitude toward those who get mental health treatment improved as a result of this training.	5.65	1.22	5.63	1.22
My attitude toward mental health professionals improved as a result of this training.	5.64	1.28	5.63	1.38

Differences in key variables immediately after the training. A series of 2 (leader, unit) x 2 (pre, post training) mixed-model ANOVAs were used to examine the immediate effects of training and potential interactions based on whether a soldier received the unit or leader training. Knowledge about mental health treatment, overall attitude toward treatment, and nine of the determinants of treatment-seeking were dependent variables (practical barriers were not assessed post-training). A summary of the ANOVAs can be found in Table 2. Soldiers were more knowledgeable about treatment and were more aware of treatment options following the unit training. Soldiers also reported lower perceptions of career stigma and stigmatizing beliefs about others, but differential treatment stigma did not significantly change. Soldiers also expressed an overall more positive attitude toward seeking treatment following training. Specific negative beliefs about treatment decreased; however, positive beliefs about treatment and negative beliefs about medications were not significantly different after training. Finally, soldiers endorsed lower preferences for self-reliance. Soldiers did not report higher perceptions of social support for seeking treatment following the training.

We found two significant interactions between time and whether the soldier received the leader or unit member training. The relationship between time and stigmatizing beliefs about others was dependent on whether the soldier received the unit or leader training, $F(1, 172) = 5.95, p < .05, \eta^2 = .03$. Simple effects revealed that there was a stronger decrease in stigmatizing beliefs about others for leaders ($p < .01, \eta^2 = .44$). The relationship for unit members was only marginal in significance and much smaller in magnitude ($p < .07, \eta^2 = .02$). In addition, the relationship between time and negative views of medication was dependent on whether the soldier received the unit or leader training, $F(1, 172) = 5.93, p < .05, \eta^2 = .03$. Examination of the simple effects revealed that there was actually a significant increase in negative views about medication among the leaders following the training ($p < .01, \eta^2 = .44$). Negative perceptions about medications decreased for unit members, but the effect was marginal in significance ($p = .06, \eta^2 = .02$).

Table 2. Mean differences in knowledge, attitudes, and intentions to help a buddy immediately following training.

	Pre-Test		Post-Test		F-value	η^2
	Mean	SE	Mean	SE		
Mental health knowledge	5.26	.15	6.74	.17	66.50**	.28
Awareness of treatment	2.76	.05	3.30	.06	56.03**	.25
Overall attitude	3.52	.12	3.76	.12	8.65**	.06
Differential treatment stigma	2.68	.10	2.58	.09	1.42	.01
Career stigma	2.52	.09	2.29	.08	9.67**	.05
Stigmatizing beliefs about others	2.47	.06	2.21	.08	16.88**	.09
Self-reliance	3.00	.08	2.83	.09	6.63*	.04
Negative beliefs about treatment	2.87	.07	2.73	.07	4.91*	.03
Positive beliefs about treatment	3.78	.06	3.79	.07	.07	.00
Negative beliefs about medication	3.04	.07	3.16	.13	.96	.01
Social support for treatment-seeking	3.86	.75	3.83	.67	.226	.001

* $p < .05$; ** $p < .01$. $N = 174$.

Three-Month Follow-Up

Supportive behaviors. A series of 2 (baseline, 3-month) x 2 (training, control) mixed methods ANOVAs were used to test for effects of the training at the three-month follow up. We did not include whether or not the soldier was a leader or unit member in the follow-up analyses because of the limited number of leaders in each of these conditions at the follow-up assessment. In testing the effects of time and training on supportive behaviors, we found that the main effect of time was non-significant, $F(1,75) = .69, p = .41$; however, the main effect of training was significant, $F(1, 75) = 7.90, p < .01, \eta^2 = .10$. Further, we found a significant interaction between time and training condition in the prediction of supportive behaviors, $F(1, 75) = 6.94, p = .01, \eta^2 = .09$. Figure 1 contains a graph of the interaction. As expected, those soldiers in the training condition showed a significant increase in the number of supportive behaviors they engaged in at the 3-month follow-up compared to baseline, $F(1,51) = 7.71, p < .01$. In contrast, those soldiers in the control group did not show an increase in supportive behaviors at the 3-month follow-up, $F(1,24) = 2.09, p = .16$. Viewing the interaction differently, the training and survey-only control group did not differ in their supportive behaviors toward fellow soldiers at baseline, $F(1, 268) = .03, p = .56$, but the training group reported more supportive behaviors at the 3-month follow-up than the control group, $F(1,81) = 8.75, p < .01$.

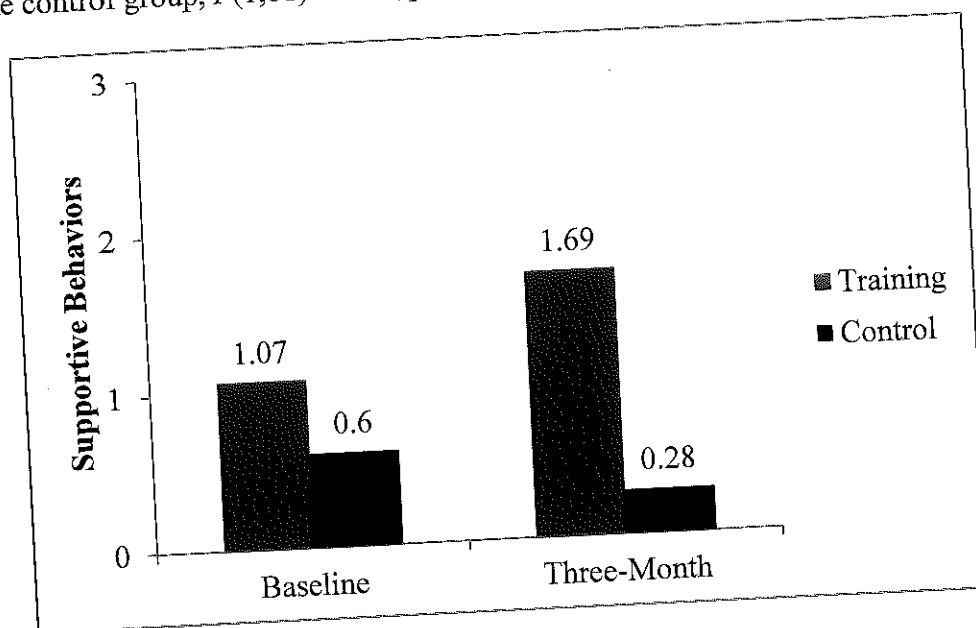


Figure 3. Differences in supportive behaviors between the training and control group from baseline to the three-month follow-up assessment

Confidence in helping. In contrast, there were no significant main effects or interactions on confidence in helping a fellow service members. This may have been a function of the initially high mean levels of confidence in helping fellow soldiers, which remained high at the 3-month follow-up in both the training condition ($M = 4.13, SD = .62$) and the survey-only control group ($M = 4.14, SD = .49$).

Mental health treatment seeking. As indicated above, there were no differences between the training and survey-only control groups in treatment seeking at baseline. However, at the 3-month follow-up a marginally significant higher percentage of soldiers in the training condition had sought treatment (21%) than in the survey-only control group (7%), $\chi^2(1) = 3.79, p = .05$.

Mental health knowledge, awareness, and determinants subscales. There were no significant main effects or interactions on knowledge regarding mental health problems and mental health care, awareness of treatment resources, or any of the determinants of treatment seeking. Furthermore, considering only the soldiers in the training condition, the immediate effects on the training on knowledge about treatment, awareness of treatment options, overall attitude toward treatment, career stigma, stigmatizing beliefs about others, self-reliance, and negative beliefs about treatment did not persist at the three-month follow-up. Table 3 highlights how the gains on key variables at the immediate post-test were lost at the 3-month follow-up.

Table 3. *Changes in key study variables from pre-test to post-test to 3-month follow-up.*

	Pre-test		Post-test		Follow-up	
	Mean	SD	Mean	SD	Mean	SD
Mental health knowledge	5.17	1.48	6.53	1.77	5.45	1.47
Awareness of treatment	3.18	.82	3.52	.72	3.37	.87
Overall attitude	3.50	1.11	3.71	1.11	3.52	1.12
Career stigma	2.60	.95	2.35	.85	2.50	.97
Stigmatizing beliefs about others	2.44	.58	2.27	.77	2.42	.58
Self-reliance	3.04	.81	2.92	.81	2.92	.95
Negative beliefs about treatment	2.89	.68	2.73	.75	2.84	.69

N range = 61 to 179.

Implicit Associations for Mental Health Treatment. Lastly, we examined the responses on the IATs at the three-month follow up. We found evidence for significant bias toward mental health treatment as being less good and effective when compared to medical treatment. The average GNB scores were significantly different from zero on both the good-bad IAT, $M = .15$, $SD = .02$, $t(231) = 7.17$, $p < .01$, and the effective-ineffective IAT, $M = .08$, $SD = .02$, $t(226) = 4.06$, $p < .01$. There were no significant differences in implicit attitudes based on whether the soldier received the training.

Conclusions and Future Research

The results of the unit training study indicate that those soldiers exposed to the unit training increased their supportive behaviors toward fellow soldiers three months following the training. However, many of the variables hypothesized to mediate the effects of unit training on supportive behaviors were increased immediately after training, but returned to baseline levels at the three month follow-up. These results suggest that "booster" training sessions may be needed in order to create long-term effects of the training. The Research Translation Office (RTO) of the Walter Reed Army Institute of Research is currently preparing a follow-on evaluation of the training. The RTO has been provided with the unit and leader training manuals and all of the videos developed for the training.

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What opportunities for training and professional development has the project provided?

If the project was not intended to provide training and professional development opportunities or there is nothing significant to report during this reporting period, state "Nothing to Report."

Describe opportunities for training and professional development provided to anyone who worked on the project or anyone who was involved in the activities supported by the project. "Training" activities are those in which individuals with advanced professional skills and experience assist others in attaining greater proficiency. Training activities may include, for example, courses or one-on-one work with a mentor. "Professional development" activities result in increased knowledge or skill in one's area of expertise and may include workshops, conferences, seminars, study groups, and individual study. Include participation in conferences, workshops, and seminars not listed under major activities.

Five graduate students have been funded at various points over the course of the grant. This funding has resulting in professional development for the students in terms of data management and analysis, writing presentations and manuscripts for publication, and designing effective unit training. The graduate students have given posters and presentations based on the grant at professional conferences and local community events.

How were the results disseminated to communities of interest?

If there is nothing significant to report during this reporting period, state "Nothing to Report."

Describe how the results were disseminated to communities of interest. Include any outreach activities that were undertaken to reach members of communities who are not usually aware of these project activities, for the purpose of enhancing public understanding and increasing interest in learning and careers in science, technology, and the humanities.

We have disseminated the results of the studies supported by the grant to multiple audiences. The determinants of treatment seeking items we developed were included in an item bank on the determinants of treatment seeking developed by researchers at the RAND Corporation. The PI was a member of an expert panel on the role of stigma and other barriers to treatment seeking in the military. Results of the grant were presented to the local Rotary community, and also shared with the Greenville Health System. Stories based on the grant were published in www.army.mil and in Clemson-sponsored publications.

What do you plan to do during the next reporting period to accomplish the goals?

*If this is the final report, state "Nothing to Report."
Describe briefly what you plan to do during the next reporting period to accomplish the goals and objectives.*

In the next three months we anticipate submitting the manuscript describing the results of the unit training study.

4. **IMPACT:** Describe distinctive contributions, major accomplishments, innovations, successes, or any change in practice or behavior that has come about as a result of the project relative to:

What was the impact on the development of the principal discipline(s) of the project?

If there is nothing significant to report during this reporting period, state "Nothing to Report."

Describe how findings, results, techniques that were developed or extended, or other products from the project made an impact or are likely to make an impact on the base of knowledge, theory, and research in the principal disciplinary field(s) of the project. Summarize using language that an intelligent lay audience can understand (Scientific American style).

In addition to the publications and presentations developed based on the research, products of the grant have the potential to both advance the understanding of treatment seeking in different occupations and improve the support for employees in high stress occupations who experience mental health problems. The determinants of treatment seeking checklist we developed will likely be used by other researchers. A representative from the Los Angeles Police Department has already modified the measure for administration to police officers.

The unit training we have developed may also be used both within the military and within other organizations to improve the number of supportive behaviors directed towards employees who are experiencing mental health problems. The training we have developed was evaluated favorably by the soldiers who participated in the study, and was found to improve supportive behaviors toward fellow soldiers experiencing mental health problems.

What was the impact on other disciplines?

If there is nothing significant to report during this reporting period, state "Nothing to Report."

Describe how the findings, results, or techniques that were developed or improved, or other products from the project made an impact or are likely to make an impact on other disciplines.

Nothing to Report.

What was the impact on technology transfer?

If there is nothing significant to report during this reporting period, state "Nothing to Report."

Describe ways in which the project made an impact, or is likely to make an impact, on commercial technology or public use, including:

- *transfer of results to entities in government or industry;*
- *instances where the research has led to the initiation of a start-up company; or*
- *adoption of new practices.*

Nothing to Report.

What was the impact on society beyond science and technology?

If there is nothing significant to report during this reporting period, state "Nothing to Report."

Describe how results from the project made an impact, or are likely to make an impact, beyond the bounds of science, engineering, and the academic world on areas such as:

- *improving public knowledge, attitudes, skills, and abilities;*
- *changing behavior, practices, decision making, policies (including regulatory policies), or social actions; or*
- *improving social, economic, civic, or environmental conditions.*

As discussed above, the measures and training developed as part of the grant have the potential to be applied to seeking treatment for mental health problems beyond the military, including personnel in other high stress occupations (e.g. police officers, firefighters) and possibly the general public.

5. **CHANGES/PROBLEMS:** The Project Director/Principal Investigator (PD/PI) is reminded that the recipient organization is required to obtain prior written approval from the awarding agency Grants Officer whenever there are significant changes in the project or its direction. If not previously reported in writing, provide the following additional information or state, "Nothing to Report," if applicable:

Changes in approach and reasons for change

Describe any changes in approach during the reporting period and reasons for these changes. Remember that significant changes in objectives and scope require prior approval of the agency.

All changes are reported above.

Actual or anticipated problems or delays and actions or plans to resolve them

Describe problems or delays encountered during the reporting period and actions or plans to resolve them.

Nothing to Report.

Changes that had a significant impact on expenditures

Describe changes during the reporting period that may have had a significant impact on expenditures, for example, delays in hiring staff or favorable developments that enable meeting objectives at less cost than anticipated.

Nothing to Report.

Significant changes in use or care of human subjects, vertebrate animals, biohazards, and/or select agents

Describe significant deviations, unexpected outcomes, or changes in approved protocols for the use or care of human subjects, vertebrate animals, biohazards, and/or select agents during the reporting period. If required, were these changes approved by the applicable institution committee (or equivalent) and reported to the agency? Also specify the applicable Institutional Review Board/Institutional Animal Care and Use Committee approval dates.

Significant changes in use or care of human subjects

Nothing to Report.

Significant changes in use or care of vertebrate animals.

Not Applicable

Significant changes in use of biohazards and/or select agents

Not Applicable

6. **PRODUCTS:** List any products resulting from the project during the reporting period. If there is nothing to report under a particular item, state "Nothing to Report."

- **Publications, conference papers, and presentations**
Report only the major publication(s) resulting from the work under this award.

Journal publications. *List peer-reviewed articles or papers appearing in scientific, technical, or professional journals. Identify for each publication: Author(s); title; journal; volume: year; page numbers; status of publication (published; accepted, awaiting publication; submitted, under review; other); acknowledgement of federal support (yes/no).*

All of the publications and presentations supported by the grant are included after the Appendices question below. All of the publications were peer reviewed, and contained an acknowledgment of support from the Grant.

Books or other non-periodical, one-time publications. *Report any book, monograph, dissertation, abstract, or the like published as or in a separate publication, rather than a periodical or series. Include any significant publication in the proceedings of a one-time conference or in the report of a one-time study, commission, or the like. Identify for each one-time publication: Author(s); title; editor; title of collection, if applicable; bibliographic information; year; type of publication (e.g., book, thesis or dissertation); status of publication (published; accepted, awaiting publication; submitted, under review; other); acknowledgement of federal support (yes/no).*

The grant supported the writing of a book chapter, which is indicated in the Appendix of publications resulting from the grant.

Other publications, conference papers, and presentations. *Identify any other publications, conference papers and/or presentations not reported above. Specify the status of the publication as noted above. List presentations made during the last year (international, national, local societies, military meetings, etc.). Use an asterisk (*) if presentation produced a manuscript.*

See the attached Appendix for a complete listing of all publications and presentations that were supported by the grant.

Statements of acknowledgment for the support of the grant were included in both documents.

• **Website(s) or other Internet site(s)**

List the URL for any Internet site(s) that disseminates the results of the research activities. A short description of each site should be provided. It is not necessary to include the publications already specified above in this section.

Nothing to Report.

- **Technologies or techniques**
Identify technologies or techniques that resulted from the research activities. In addition to a description of the technologies or techniques, describe how they will be shared.

Nothing to Report.

- **Inventions, patent applications, and/or licenses**
Identify inventions, patent applications with date, and/or licenses that have resulted from the research. State whether an application is provisional or non-provisional and indicate the application number. Submission of this information as part of an interim research performance progress report is not a substitute for any other invention reporting required under the terms and conditions of an award.

Nothing to Report.

- **Other Products**
Identify any other reportable outcomes that were developed under this project. Reportable outcomes are defined as a research result that is or relates to a product, scientific advance, or research tool that makes a meaningful contribution toward the understanding, prevention, diagnosis, prognosis, treatment, and/or rehabilitation of a disease, injury or condition, or to improve the quality of life. Examples include:

- *data or databases;*
- *biospecimen collections;*
- *audio or video products;*
- *software;*
- *models;*
- *educational aids or curricula;*
- *instruments or equipment;*
- *research material (e.g., Germplasm; cell lines, DNA probes, animal models);*
- *clinical interventions;*
- *new business creation; and*
- *other.*

The unit training manuals for the project have been finalized. These include the developed videos, which have been shared with the Research Transition Office of the WRAIR.

7. PARTICIPANTS & OTHER COLLABORATING ORGANIZATIONS

What individuals have worked on the project?

Provide the following information for: (1) PDs/PIs; and (2) each person who has worked at least one person month per year on the project during the reporting period, regardless of the source of compensation (a person month equals approximately 160 hours of effort). If information is unchanged from a previous submission, provide the name only and indicate "no change."

Personnel worked on the Grant over the 5-Year Period

Name:	Thomas W. Britt, Ph.D.
Project Role:	Principal Investigator
Contribution to Project:	Managed the overall project. Contributed to manuscripts and presentations. Primary role in development of the unit and leader training and coordination of the unit training study.
Name:	Cynthia L.S. Pury, Ph.D.
Project Role:	Co-Investigator
Contribution to Project:	Contributed to design of studies and unit training. Contributed to manuscripts and presentations.
Name:	Heidi M. Zinzow, Ph.D.
Project Role:	Co-Investigator
Contribution to Project:	Contributed to manuscripts/presentations, some study design.
Name:	Mary A. Raymond, Ph.D.
Project Role:	Co-Investigator
Contribution to Project:	Contributed to design of studies and unit/leader training. Contributed to manuscripts and presentations.
Name:	Kristen S. Jennings, M.S.
Project Role:	Graduate Student
Contribution to Project:	Conducted data management and analysis; contributed to development of unit and leader training.
Name:	Hiu Ngae (Janelle) Cheung, B.S.
Project Role:	Graduate Student
Contribution to Project:	Conducted data management and analysis; contributed to development of unit and leader training.

Personnel worked on the Grant over the 5-Year Period (continued)

Name:	Anna C. McFadden, M.S.
Project Role:	Graduate Student
Contribution to Project:	Conducted data management and analysis; contributed to development of unit and leader training.
Name:	Crystal Burnette, M.S.
Project Role:	Graduate Student
Contribution to Project:	Conducted data management and analysis; contributed to development of unit and leader training.
Name:	Skye Gillespie, M.S.
Project Role:	Graduate Student
Contribution to Project:	Conducted data management and analysis; contributed to development of unit and leader training.

8. Has there been a change in the active other support of the PD/PI(s) or senior/key personnel since the last reporting period?

If there is nothing significant to report during this reporting period, state "Nothing to Report." If the active support has changed for the PD/PI(s) or senior/key personnel, then describe what the change has been. Changes may occur, for example, if a previously active grant has closed and/or if a previously pending grant is now active. Annotate this information so it is clear what has changed from the previous submission. Submission of other support information is not necessary for pending changes or for changes in the level of effort for active support reported previously. The awarding agency may require prior written approval if a change in active other support significantly impacts the effort on the project that is the subject of the project report.

What other organizations were involved as partners?

If there is nothing significant to report during this reporting period, state "Nothing to Report."

Describe partner organizations – academic institutions, other nonprofits, industrial or commercial firms, state or local governments, schools or school systems, or other organizations (foreign or domestic) – that were involved with the project. Partner organizations may have provided financial or in-kind support, supplied facilities or equipment, collaborated in the research, exchanged personnel, or otherwise contributed.

Provide the following information for each partnership:

Organization Name:

Location of Organization: (if foreign location list country)

Partner's contribution to the project (identify one or more)

- *Financial support;*
- *In-kind support (e.g., partner makes software, computers, equipment, etc., available to project staff);*
- *Facilities (e.g., project staff use the partner's facilities for project activities);*
- *Collaboration (e.g., partner's staff work with project staff on the project);*
- *Personnel exchanges (e.g., project staff and/or partner's staff use each other's facilities, work at each other's site); and*
- *Other.*

We had an in-person day-long meeting with personnel from the Department of Military Psychiatry at the Walter Reed Army Institute of Research in Forest Glenn, Maryland to deliver the initial version of our FMHT Intervention. We also had a conference call meeting to deliver the revised version of our FMHT intervention that lasted approximately 3.5 hours and the WRAIR researchers provided feedback that was incorporated into the final version of the training.

8. SPECIAL REPORTING REQUIREMENTS

COLLABORATIVE AWARDS: For collaborative awards, independent reports are required from BOTH the Initiating PI and the Collaborating/Partnering PI. A duplicative report is acceptable; however, tasks shall be clearly marked with the responsible PI and research site. A report shall be submitted to <https://ers.amedd.army.mil> for each unique award.

QUAD CHARTS: If applicable, the Quad Chart (available on <https://www.usamraa.army.mil>) should be updated and submitted with attachments.

9. **APPENDICES:** Attach all appendices that contain information that supplements, clarifies or supports the text. Examples include original copies of journal articles, reprints of manuscripts and abstracts, a curriculum vitae, patent applications, study questionnaires, and surveys, etc.

Appendix of Publications and Presentations funded by the Grant

Publications from the Grant

Cheung, J.H., Britt, T.W., Raymond, M.A., Pury, C.L., & Zinzow, H.M. (in press). Soldier recommendations for improving mental health treatment seeking in the military. *Military Behavioral Health*.

Britt, T.W., Jennings, K.S., Cheung, J.H., Pury, C.L.S., Zinzow, H.M., Raymond, M., & McFadden, A.C. (2015). Determinants of mental health treatment among soldiers who recognize they have a problem. Under review at *Work & Stress*.

Britt, T.W., Jennings, K.S., Cheung, J.H., Pury, C.L.S., & Zinzow, H.M. (2015). The role of different stigma perceptions in treatment seeking and dropout among active duty military personnel. *Psychiatric Rehabilitation Journal (Special Issue: Self-Stigma and Mental Illness)*, 38, 142-149.

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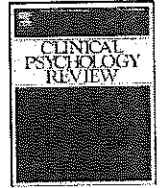
- Britt, T.W. (2015, August). *Unit training to reduce stigma and improve attitudes toward mental health treatment*. Chair of a symposium presented at the annual meeting of the American Psychological Association, Toronto, CA.
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- Zinzow, H. M., Britt, T.W., Pury, C. L. S., Jennings, K. S., & Cheung, J. H. (2015, August). *Facilitators of mental health treatment seeking: An empirically-informed unit training*. Symposium presentation at the annual meeting of the American Psychological Association, Toronto, CA.
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- Pury, C. L. S., Britt, T. W., Zinzow, H. M., Raymond, M. A., McFadden, A. C. (2013, August). *Low Levels of Savoring Predict Treatment Seeking in an Active-Duty Military Sample*. Paper presented at the American Psychological Association 2013 Annual Convention, Honolulu, HI.
- Pury, C. L. S., Zinzow, H., Burnette, C., Breeden, C. (2012, August). Psychological courage as a facilitator of treatment seeking in an active duty military sample. Poster presented at the American Psychological Association 120th Convention, Orlando, FL.
- Britt, T.W., Raymond, M.A., & McFadden, A. (2012, August). *The multiple ways leaders can either facilitate or prevent treatment seeking by military personnel*. Poster presented at the annual meeting of the American Psychological Association, Orlando, FL.
- Raymond, M.A., Britt, T.W. & McFadden, A. (2012, August). *Encouraging receipt of mental health treatment: Recommendations from military personnel*. Poster presented at the annual meeting of the American Psychological Association, Orlando, FL.
- Zinzow, H., Pury, C., & Gillespie, S. (August 2012). *Perceptions of mental health treatment as barriers to care among active duty soldiers*. Annual Convention of the American Psychological Association (APA), Orlando, FL.



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Connecting active duty and returning veterans to mental health treatment: Interventions and treatment adaptations that may reduce barriers to care

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HIGHLIGHTS

- ▶ Barriers to care include stigma, practical barriers, and treatment perceptions.
- ▶ Treatment adaptations and other interventions may help address these barriers.
- ▶ Adaptations include brevity, flexibility, and use of technology.
- ▶ Interventions also reframe perceptions and include military-specific components.
- ▶ Future research should examine the efficacy of these adaptations.

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ABSTRACT

Recent military operations in Afghanistan and Iraq have involved multiple deployments and significant combat exposure, resulting in high rates of mental health problems. However, rates of treatment-seeking among military personnel are relatively low, and the military environment poses several obstacles to engaging in effective clinical interventions. The current paper first reviews barriers and facilitators of treatment-seeking and engagement among military personnel, including stigma, practical barriers, perceptions of mental health problems, and attitudes towards treatment. Next, this paper reviews treatment adaptations and other interventions that are intended to reduce barriers to care among active duty and returning military personnel. These include early interventions, brief formats, integrating clinicians into the medical and military context, technology-based interventions, addressing negative treatment perceptions, screening/early identification, and enlisting unit support.

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Contents

1.	Introduction	742
2.	Prevalence of psychiatric disorders	742
3.	Mental health treatment-seeking	742
4.	Barriers to mental health treatment-seeking	743
5.	Facilitators of mental health treatment-seeking	744
6.	Barriers to effectively implementing mental health interventions with military service members	744
7.	Early, preventive interventions that may address barriers to care	744
7.1.	Combat Stress Control Treatment	744
7.2.	Psychological debriefing	747
7.3.	Resiliency training	747
8.	Adaptations of mental health interventions that may address barriers to care	748
8.1.	Changing service delivery formats	748
8.1.1.	Brief Interventions that are integrated into military and medical settings	748
8.1.2.	Use of technology	749
8.2.	Group formats	750
8.3.	Addressing negative beliefs about mental health treatment	750

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8.4. Incorporating targeted components into mental health treatments	750
8.5. Relapse prevention	750
9. Other interventions designed to facilitate mental health treatment-seeking	750
9.1. Screening and early identification	751
9.2. Enlisting fellow unit members to assist service members in need of treatment	751
10. Conclusions and future directions	751
Acknowledgment	751
References	751

1. Introduction

Since September 11, 2001, American service members have deployed nearly 3.3 million times to Iraq or Afghanistan. This number, as of October 2009, reflects the fact that over 2 million individual service members have deployed, with nearly 800,000 deploying multiple times (Tan, 2009). Current military operations frequently involve multiple deployments and high intensity guerilla warfare, resulting in heightened exposure to traumatic events such as direct fire, witnessed violence, and physical injury (J-MHAT 7, 2011; Seal, Bertenthal, Miner, Sen, & Marmar, 2007; Wright, Huffman, Adler, & Castro, 2002). For example, commonly reported stressors among soldiers and marines returning from military operations in Afghanistan and Iraq include roadside bombs, length of deployment, handling human remains, killing an enemy, seeing dead or injured Americans, and being unable to stop a violent situation (Hoge et al., 2004). In studies of soldiers and marines who deployed to Iraq, 71–86% reported having engaged in a fire-fight, 50–57% had handled human remains, and 55–58% had experienced an improvised explosive device (Hoge et al., 2004; J-MHAT 7, 2011). Combat exposure is associated with a high risk of developing mental health problems, including posttraumatic stress disorder (PTSD), depression, and substance abuse/dependence (e.g., Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995).

Despite these needs, rates of mental health treatment-seeking among military personnel are low. Therefore, it is important to understand barriers and facilitators of treatment-seeking in this population. In order to facilitate receipt and delivery of effective treatments, it is also important to evaluate the empirical support for interventions designed to alleviate the mental health problems that are commonly encountered in military settings. Although several of these treatments have been evaluated for the veteran population, fewer have been tested among active duty personnel. In the present review we pay special attention to the challenges associated with active duty service members seeking and benefiting from mental health treatment (e.g. stigma, demanding work schedules, low emotional engagement), and discuss adaptations to evidence-based treatments that can improve their effectiveness when applied to the active duty and returning veteran population.

The present review begins with a discussion of the prevalence of psychiatric disorders and mental health treatment-seeking in military populations. We then summarize research on barriers and facilitators of treatment-seeking and effectively engaging in treatment. Next, we review treatment-outcome studies that have been conducted with active duty and returning veterans, with a focus on how these treatments address the challenges of delivering treatment in the military environment. Finally, we describe the importance of treatment adaptations that address barriers to care among military personnel, and programs that attempt to reduce the stigma associated with getting needed treatment.

2. Prevalence of psychiatric disorders

Studies estimate that 19–44% of soldiers returning from Afghanistan or Iraq (Operation Enduring Freedom (OEF), Operation Iraqi Freedom (OIF)) meet current criteria for a mental health diagnosis (Hoge,

Auchterlonie, & Milliken, 2006; Kim, Thomas, Wilk, Castro, & Hoge, 2010; Milliken, Auchterlonie, & Hoge, 2007; Seal et al., 2007; Seal et al., 2009). Approximately 14–28% meet current or past year criteria for PTSD (Seal et al., 2009; Tanielian et al., 2008; Thomas et al., 2010), 13–14% meet criteria for depression (Seal et al., 2009; Tanielian et al., 2008; Thomas et al., 2010) and 3–5% meet criteria for alcohol or drug use disorders (Seal et al., 2009). In a representative sample of the U.S. population, the rate of current PTSD is estimated to be 3%, and the rate of major depressive disorder is estimated to be 7% (Kessler, Chiu, Demler, & Walters, 2005). Therefore, the estimated prevalence of PTSD is five to seven times higher and the prevalence of depression is twice as high among recently deployed service members. The prevalence of alcohol and drug use disorders appears to be similar across civilian and deployed military personnel samples (Grant et al., 2004; Ramchand et al., 2011).

3. Mental health treatment-seeking

Despite high rates of mental health disorders, a large portion of soldiers do not get help for their difficulties. Several studies of recently deployed service members indicate that approximately half of individuals with a mental health problem do not seek mental health services (Hoge et al., 2006; Kehle et al., 2010; Tanielian et al., 2008). In a study of soldiers and Marines who met criteria for a psychiatric disorder, only 23 to 40% reported receiving professional help during the previous year (Hoge et al., 2004). Furthermore, most soldiers do not pursue follow-up care after their initial referral to mental health treatment. In a study of Iraq veterans, only 42% of those referred for mental health treatment received follow-up care (Milliken et al., 2007). Therefore, it appears that soldiers do not seek or receive mental health services commensurate with the high needs for treatment in this population.

4. Barriers to mental health treatment-seeking

Prior researchers have posited that one of the primary reasons soldiers do not seek treatment for psychological problems is the stigma associated with admitting psychological difficulties (Britt, 2000; Greene-Shorridge, Britt, & Castro, 2007; Porter & Johnson, 1994). Soldiers may believe that seeking treatment from a mental health professional will lead other soldiers to view them as weak and incapable of handling their own problems, and that their commanders will view and rate them differently. Britt (2000) examined the stigma associated with having a psychological versus medical problem among soldiers ($N=800$) returning from a peacekeeping mission to Bosnia. Britt (2000) found that 61% of soldiers agreed with the statement that admitting a psychological problem would harm their career (compared to 43% for admitting a medical problem) and 45% believed that admitting a psychological problem would cause their co-workers to have less confidence in them (compared to 22% for a medical problem). Overall, the stigma associated with admitting a psychological problem was significantly higher than the stigma associated with admitting a medical problem.

Similarly, a study of OEF/OIF veterans found that one in three service members were concerned about stigma associated with mental health treatment-seeking (Hoge et al., 2004), and another study of Iraq

veterans found that 70% had a concern about being labeled as having a mental disorder (Stecker, Fortney, Hamilton, & Ajzen, 2007). These concerns are likely to be elevated in the military environment due to the fact that commanding officers have access to service members' mental health records, and service members who are seen as "unfit" for service can be discharged or removed from duty (Porter & Johnson, 1994; Vogt, 2011).

In addition to the stigma of seeking treatment, researchers have found that service members perceive practical barriers associated with getting care, such as not having adequate transportation to get to treatment, not being able to get time off for treatment, and not having financial resources for treatment (Britt et al., 2008; Hoge et al., 2004; Sayer et al., 2009; Wright et al., 2009). Hoge et al. (2004) found that soldiers returning from Iraq who scored positively for a mental health problem were twice as likely as other troops to report fear of stigmatization and concern about practical barriers to obtaining psychological help. In addition, Britt, Greene, Castro, and Hoge (2006) found that among soldiers reporting a psychological problem, those who sought treatment for their problem reported lower stigma and fewer barriers to care than those who did not seek treatment. Research has shown that stigma and practical barriers to care represent two different dimensions regarding why service members do not seek needed treatment (Britt et al., 2008; Wright et al., 2009), and will likely require different interventions to encourage treatment-seeking.

Although most of the research on determinants of treatment-seeking in a military setting has focused on stigma and practical barriers to care, some recent research has investigated the role of personal beliefs about mental illness and treatment. Regarding personal beliefs about mental illness, one qualitative study of active-duty male Air Force personnel experiencing symptoms of PTSD found that soldiers felt they could handle the problems themselves, that they were not ready to talk about their problems, and that they did not want to make a big deal out of their symptoms (Visco, 2009). Similarly, Britt et al. (2011) found that Reserve Component veterans who had a mental health problem but did not seek treatment reported beliefs that the problem was not severe or that the veteran could handle the problem themselves. Beliefs that psychological problems can be handled oneself may delay treatment-seeking (MacKenzie, Gekoski, & Knox, 2006; Mackenzie, Knox, Gekoski, & Macaulay, 2004). Such beliefs may be more prevalent in military settings, where soldiers are expected to "tough out" difficult emotions (Nash, Silva, & Litz, 2009; Vogt, 2011).

Studies have also identified beliefs about mental health treatment that serve as barriers to care. These include beliefs that providers are untrustworthy or won't understand them, that treatment is not helpful, that treatment is only for extreme problems, and that negative side effects will be experienced in response to medication (Edlund, Fortney, Reaves, Pyne, & Mittal, 2008; Kim, Britt, Klocko, Riviere, & Adler, 2011; Sayer et al., 2009). In addition, a discouraging social network and lack of knowledge about mental illness represent potential determinants of treatment-seeking behavior in military populations (Sayer et al., 2009).

A small number of studies have empirically examined the relationships between these attitudes and treatment-seeking. In a study of soldiers who had deployed to Iraq, negative attitudes about mental health care were associated with decreased likelihood of seeking treatment (Kehle et al., 2010). Among National Guard and reservist soldiers, negative beliefs about psychotherapy and decreased levels of perceived unit support were associated with more stigma and barriers to care. Negative beliefs about mental health care have also been associated with decreased likelihood of seeking counseling and medication (Pietrzak, Johnson, Goldstein, Malley, & Southwick, 2009). Kim et al. (2011) examined treatment-seeking in active duty soldiers deployed to Iraq, and found that negative beliefs about mental health treatment and mental health professionals distinguished soldiers with a mental health problem who sought treatment from those who did not. These

studies suggest that stigma, access to care, and beliefs about mental health treatment all represent important barriers to mental health service use. Therefore, interventions that address these barriers would likely be of benefit in facilitating mental health treatment-seeking.

5. Facilitators of mental health treatment-seeking

In contrast to research on the barriers to mental health treatment seeking, little research has examined facilitators of treatment-seeking in military samples, and only a few studies have focused on active duty service members. Two studies have examined the relation between leadership and barriers to care. Wright et al. (2009) surveyed 680 soldiers in combat support units three months after deployment to Iraq. Findings indicated that soldiers who rated their leaders (officers) more highly on leadership skills and reported higher unit cohesion were less likely to report stigma towards mental health treatment-seeking. They were also less likely to endorse barriers to care such as scheduling and logistical difficulties. Britt, Wright, and Moore (2012) examined noncommissioned officer (NCO) and officer leadership (both positive and negative leader behaviors) as predictors of stigma and practical barriers, both between soldiers and within soldiers over a three month time period. These authors found that NCO leadership was a stronger predictor of stigma and barriers to care than officer leadership, which is consistent with the argument that NCOs have a more direct impact on their unit members (Knapp, McCloy, & Heffner, 2004; Van Iddekinge, Ferris, & Heffner, 2009). Furthermore, within soldiers, changes in negative leader behaviors were associated with changes in perceived stigma over a three-month time period, whereas positive leader behaviors were associated with fewer barriers over the same time period.

A third study was restricted to active duty Canadian military members who met criteria for a lifetime PTSD diagnosis (Fikretoglu, Brunet, Schmitz, Guay, & Pedlar, 2006). In this study, participants with a history of sexual trauma were more likely to seek treatment than those exposed to war zone trauma. Individuals with more instances of trauma exposure and whose symptoms interfered with functioning were also more likely to seek treatment. Finally, being married or previously married, as well as reporting an income of \$40–\$60K per year (vs. >\$80K), was associated with increased likelihood of seeking treatment.

Other studies of facilitators of mental health treatment-seeking among military personnel have relied on veteran samples. In one study of 174 veterans who had sought outpatient treatment for PTSD at a Veterans Affairs (VA) Medical Center, previous inpatient mental health treatment, but not PTSD symptom severity, was associated with future mental health service use (Elhai et al., 2007). In a study of Australian Vietnam war veterans, researchers found that veterans were more likely to self-refer for government-funded treatment if they had negative feelings towards others after arriving home, if they felt discriminated against for Vietnam veteran status, if they were reluctant to reveal their veteran status, or if they recently talked or argued about Vietnam (Dobson, Grayson, Marshall, & O'Toole, 1998).

One qualitative study of 44 Vietnam and OEF/OIF veterans examined the determinants of PTSD treatment-seeking (Sayer et al., 2009). Treatment facilitators were grouped into four themes: a) recognition and acceptance of PTSD and availability of help, b) treatment-encouraging beliefs, c) system facilitation, and d) social network facilitation and encouragement. Examples of treatment-encouraging beliefs were "getting help is socially acceptable," "treatment is helpful," and "the system is trustworthy." System facilitators included procedures that reduced stigma, improved access and PTSD recognition, as well as providers that promoted help-seeking. Taken together, these studies indicate that trauma history, symptom interference, prior treatment-seeking behavior, supportive organizational climate, social facilitation, systems that promote treatment-seeking, and beliefs about treatment represent

facilitators of treatment-seeking among military service members. Further research is needed to determine which of these facilitators are most important in determining treatment-seeking behavior.

6. Barriers to effectively implementing mental health interventions with military service members

Aside from barriers to accessing mental health treatment, such as stigma and difficult work schedules, certain barriers to effectively implementing mental health interventions have been noted among military personnel. First, researchers have observed that engagement in treatment and developing a therapeutic relationship are frequently a problem when treating military personnel (Flack, Litz, & Keane, 1998). Similarly, emotional detachment presents a particular challenge for the implementation of techniques that require significant engagement with traumatic memories and threatening stimuli (Reger & Gahm, 2008). Furthermore, anger is a prominent feature of combat-related PTSD, with one study of Vietnam veterans finding that anger accounted for 40% of the variance in PTSD scores after controlling for age, education, and combat exposure (Novaco & Chemtob, 2002). In a study of 103 veterans, Forbes et al. (2008) found that anger predicted worse PTSD treatment outcome (i.e., more symptoms at 9 month follow-up). The authors suggested that anger can impair the ability to engage in trauma-related fear during therapeutic exercises, interfere with the therapeutic alliance, inhibit self-reflection, and result in premature termination. Not surprisingly, researchers have noted that cognitive-behavioral interventions are difficult to implement with military populations until improved arousal management has been achieved (Creamer & Forbes, 2004).

These problems may be prominent among military personnel for several reasons. First, elevated rates of childhood trauma exposure and difficulty trusting civilians may lead to interpersonal difficulties, including challenges in developing a therapeutic alliance. Second, military training that emphasizes mental toughness, the need to shut down emotions, and the use of anger as an adaptive way to respond to threat could lead to trouble experiencing fear and other relevant emotions in mental health treatment (Creamer & Forbes, 2004; Forbes et al., 2008). Third, lengthy combat deployments that involve emotionally challenging work could encourage prolonged hyperarousal and emotional detachment, and potentially lead to changes in biology that result in "treatment resistant PTSD" (Creamer & Forbes, 2004; Reger & Gahm, 2008). Fourth, military service members are primarily male, and men have been shown to be less responsive than women to pharmacological and psychological treatment for PTSD (Foa, Keane, & Friedman, 2000). Finally, a particular barrier for active duty service members involves their fluctuating assignments and frequently changing duty stations, which results in high dropout rates from treatment (McLay et al., 2011). Although researchers and clinicians have often described these barriers to treatment engagement among military personnel, their conclusions have been primarily based on clinical observation and theory. Therefore, more research is needed to confirm the prevalence of these barriers, and to examine their relationship with treatment outcomes.

We next describe interventions and treatment adaptations that have been developed to address barriers to care and facilitate receipt of needed treatment among active duty and returning veterans. We first describe several early or preventive interventions that have been applied within the military context in the hopes of returning soldiers to duty quickly before symptoms reach a high level. We then address adaptations that have been made to traditional mental health treatment in order to enhance the likelihood that service members will access and engage in treatment. Finally, we describe interventions that are not intended to treat symptoms, but also serve to facilitate mental health treatment-seeking. Throughout our review, we focus on the importance of empirically evaluating the effectiveness of these interventions and modifications to ensure service members are receiving evidence-based care.

7. Early, preventive interventions that may address barriers to care

Early and preventive interventions are more likely than formal mental health treatments to be delivered in the operational environment while the service member is still in the presence of his or her primary unit. Therefore, preventive interventions may bypass some of the logistical factors that deter military personnel from seeking formal mental health treatment. They may also facilitate treatment-seeking by encouraging early recognition of problems that require further treatment, and by reducing stigma towards formal mental health treatment-seeking. In the present section we discuss a number of such interventions, and highlight the importance of establishing their efficacy. Table 1 summarizes early interventions, barriers/facilitators addressed, and outcomes for studies that included active duty or OEF/OIF veterans. To interpret effect sizes, we followed Cohen's (1988) guidelines: .2 = small; .5 = moderate; .8 = large.

7.1. Combat Stress Control Treatment

One category of these interventions falls under the domain of Combat Stress Control Treatment (CSC). This treatment adopts the U.S. Department of Defense's BICEPS, PIES, and PIE principles (Department of Defense, 1999). BICEPS is an acronym that subsumes the PIES and PIE principles, and stands for the following:

- Brevity. Treatment is short-term, problem-focused, and geared towards return to service.
- Immediacy. Offer treatment as soon as symptoms are evident. This conveys that a psychological injury is taken as seriously as a physical injury, and maintains an expectation of recovery and return to duty.
- Centrality. Treatment is offered in a centralized Combat Stress Control unit, which is kept separate from the medical unit. The aim is to reduce stigma associated with seeking mental health services.
- Expectancy. Treatment conveys the expectation that soldiers will recover and return to duty.
- Proximity. Care is provided as close to the battlefield as possible. The aim is to reinforce the idea that soldiers will recover, do not need to be stigmatized and separated from their units, and will return to duty.
- Simplicity. Aside from psychotherapy, treatment ensures that basic needs are met, such as rest, food, hygiene, and reassurance.

In one study of 38 active duty personnel who were referred by mental health providers, participants completed a two day CSC program while deployed to Iraq (Potter, Baker, Sanders, & Peterson, 2009). The program consisted of psychoeducational classes and individual therapy sessions that focused on stress reactions, coping skills, stress management, and interpersonal relationships. Program completers exhibited reduced PTSD symptoms and general distress, resulting in a moderate pre-post effect size. Although the study did not include a comparison group, these findings suggest the potential utility of applying this brief form of treatment to soldiers in a deployed setting.

7.2. Psychological debriefing

Other brief, early interventions are intended to prevent chronic symptoms and are based on the psychological debriefing model. This approach typically involves group sessions after exposure to traumatic stressors that focus on sharing emotional responses and normalizing common reactions (Raphael & Wilson, 2000). Such approaches may help combat stigma towards mental health treatment-seeking, since they are not presented as mental health treatment, but rather as an opportunity to share common reactions to extreme stressors in the context of an organizational duty. One of these models is termed Critical

Table 1
Intervention adaptations, barriers/facilitators addressed, and treatment outcomes.

Study	Sample	Intervention conditions	Setting	Treatment adaptations	Barriers/Facilitators addressed	Outcome measures	Average pre-post effect sizes (<i>d</i>)
<i>Early, preventive interventions</i>							
Adler et al. (2008)	952 active duty peacekeepers	Critical incident stress debriefing (CISD)	Base camps during deployment	Brief group debriefing Administered by military personnel	Practical barriers (time, access) Stigma	PCL; CES-D; Conflict Tactics Scale	0.06 8.5 month follow-up: .16
Adler et al. (2009)	2297 OEF/OIF returning veterans	1. Battlemind debriefing 2. Small Battlemind training 3. Large Battlemind training 4. Stress education	U.S. military installation; Small groups in classrooms; Large groups in theater	Brief Emphasize reintegration Reframe treatment perceptions Incorporated into standard reintegration training	Practical barriers (time, access) Stigma Negative mental health perceptions Early symptom identification	PCL; PHQ-Depression; Sleep problems; Stigma	1. .09 ^a 2. .02 3. .09
Blevins et al. (2011)	144 OEF/OIF returning veterans	1. Life Guard workshop intervention 2. Delayed intervention control	U.S. drill training sites	Brief, interactive workshop Incorporated into military training Peer support	Practical barriers (time, access) Engagement Encouraging social network	Short Form Health Survey-12, PHQ-9, Generalized Anxiety Disorder scale (GAD), panic screen from Brief PHQ, PCL-C, Buss-Perry Aggression measure, Dyadic Adjustment Scale (DAS), CTS, AUDIT	Significant changes: 1. PHQ-9, GAD, PCL-C, DAS 2. None
Bryan and Morrow (2011)	192 active duty soldiers	Defender's Edge (DEFED)	During deployment; skills training during battle drills, training, missions; services in medical offices	Emphasizes resiliency Reframes symptom/treatment perceptions Conducted in context of work duties Clinician military integration Medical and work duty settings Uses BICEPS principles	Practical barriers (time, access) Stigma Negative mental health perceptions Engagement Early recognition	-	-
Potter et al. (2009)	38 active duty soldiers	Individual and group Combat Stress Control (CSC) treatment	CSC Restoration Center at an Air Base during deployment	-	Practical barriers (time, access) Stigma	PCL-M; Outcome Questionnaire-45	0.54
<i>Brief interventions integrated into military and medical settings</i>							
Cigrang et al. (2011)	15 OEF/OIF veterans	PE/CPT	Primary care clinic at an Army medical center	Brief Delivered in primary care	Practical barriers (time, access) Stigma	PSSI-I PCL-M PHQ-9 Behavioral Health Measure	0.43
Corso et al. (2009)	19 active duty soldiers	1. Writing exposure 2. Impact statement (cognitive restructuring) 3. TAU	Family medicine clinic at an Air Force base	Brief Delivered in primary care	Practical barriers (time, access) Stigma	PCL-M; Behavioral Health Measure-20	1. 0.72 2. 1.47 3. 0.49
Steenkamp et al. (2011)	8 active duty Marines	PE/CPT	Behavioral health clinic at Marine Camp	Brief In garrison Avoided stigmatizing language Targeted grief, shame, guilt	Practical barriers (time, access) Stigma Negative perceptions of mental health Military-related beliefs	PCL PHQ	1.73
<i>Virtual Reality Therapy</i>							
McLay et al. (2011)	20 active duty soldiers	1. VR-GET 2. TAU	U.S. Navy medical facilities	Virtual reality Physiologic monitoring Skills training Virtual reality	Practical barriers (time, access) Engagement Stigma	CAPS	1. 1.29 2. 0.44
Reger et al. (2011)	24 active duty soldiers	VRE	U.S. Army medical center	-	Practical barriers (time, access) Engagement Stigma	PCL-M	1.17
<i>Telehealth service delivery</i>							
Litz et al. (2007)	45 service members, OEF/OIF or 9/11 exposure	1. Self-management CBT 2. Supportive counseling	Internet (while in U.S.)	Internet-based delivery	Practical barriers (time, access, resources) Stigma	BAI BDI-II PSSI-I	Pre-post 1. 1.00 2. 0.68 6 month follow-up 1. 1.63 2. 0.80

(continued on next page)

Table 1 (continued)

Study	Sample	Intervention conditions	Setting	Treatment adaptations	Barriers/Facilitators addressed	Outcome measures	Average pre-post effect sizes (d)
Telehealth service delivery Morland et al. (2011)	13 veterans (38% OEF/OIF)	1. In-person group CPT 2. Teleconference group CPT	VA clinic conference room	2 sessions p/week Group teleconference delivery Pretreatment PTSD psychoeducation Modified CPT language to ease understanding for veterans Telehealth delivery	Practical barriers (time, access, resources) Beliefs about mental health	CAPS	Significant difference on CAPS for both groups; no difference between groups
Strachan et al. (2011)	31 OEF/OIF veterans	1. PE/BA in-person 2. PE/BA home based telehealth	VA medical center or home (in U.S.)	Telehealth delivery	Practical barriers (time, access) Stigma	PCL-M BDI-II BAI	1. 0.50 2. 0.67
Tuerk et al. (2010)	47 combat veterans (72% OEF/OIF)	1. PE in-person 2. PE via telehealth	VA medical center or home (in U.S.)	Telehealth delivery	Practical barriers (time, access) Stigma	PCL-M BDI-II	1. 3.20 2. 2.58
Group Therapy Alvarez et al. (2011)	197 veterans (8% OEF/OIF)	1. CPT 2. TAU	VA residential treatment program	Group format Pretreatment PTSD psychoeducation Modified language to be more relevant for veterans Brief	Practical barriers (resources) Beliefs about mental health	PCL, BDI, Brief COPE, Symptom Checklist-6, Quality of Life-BREF	1. 0.12 2. 0.04
Norman et al. (2010)	14 OEF/OIF veterans	Seeking Safety (SS)	VA medical center		Practical barriers (time) Treating complex problems	PCL-M; BDI-II	0.76
Screening and Early Identification Hoyt and Candy (2011)	Madigan Army Medical Center	Army-wide screening	U.S. Army medical center	Contact with provider Psychoeducation on symptoms Referrals from commanders Screen mental health problems in primary care settings Interface between primary care and mental health clinics	Stigma Early symptom identification Organizational support Stigma Early symptom identification Treatment engagement		
Engel et al. (2008)	30 primary care providers	RESPECT-MIL	U.S. Army primary care clinic				
Enlisting fellow unit members to assist service members in need of treatment Payne et al. (2008)	Active duty Army soldiers	Unit Watch	In garrison and operational settings; all unit locations/activities outside of clinic U.S. drill training sites	Unit members reduce suicidal/homicidal risks and ensure soldier stays in outpatient treatment Peers assess mental health needs and connect soldiers with resources	Stigma of inpatient care Support network		
Greden et al. (2010)	National Guard and Reserves returning veterans	Buddy-to-Buddy			Stigma Support network Early symptom identification		

PCL = PTSD Checklist; PHQ = Patient Health Questionnaire; CAPS = Clinician Administered PTSD Scale; PSSI-I = PTSD Symptom Scale, Interview Version; IES = Impact of Events Scale; CES-D = Center for Epidemiological Studies-Depression Scale; BDI = Beck Depression Inventory; CES-D = Center for Epidemiological Studies Depression Scale; BAI = Beck Anxiety Inventory; AUDIT = Alcohol Use Disorders Identification Test; CIS = Conflict Tactics Scale.
PE = Prolonged Exposure; VRE = Virtual Reality Exposure Therapy; VR-GET = Virtual Reality Graded Exposure Therapy; TAU = Treatment As Usual; BA = Behavioral Activation; CPT = Cognitive Processing Therapy.

^a Baseline scores were not provided. Therefore, average d was calculated using 4 month follow-up scores, with stress education as the referent group.

Incident Stress Debriefing (CISD) and consists of guiding groups through a seven-stage discussion after exposure to a severe stressor. In a randomized trial of CISD with platoons of 952 peacekeepers, the intervention was administered by behavioral healthcare providers who were also military personnel (Adler et al., 2008). CISD was compared to a stress management class and no intervention. Overall, PTSD symptoms in the CISD group were not significantly different from the no intervention group. For soldiers reporting a high degree of exposure to stressors, CISD was minimally associated with lower PTSD symptoms and aggression, higher organizational support, and more alcohol problems. The authors concluded that there are no clear positive effects of

CISD, although it provides an intervention that is sensitive to the military work culture and consistent with military traditions involving group debriefing.

A second study of psychological debriefing approaches as applied to active duty personnel examined the effects of an intervention titled "Battlemind" (Adler, Bliese, McGurk, Hoge, & Castro, 2009). Battlemind debriefing and training interventions emphasize reintegration to life in a garrison environment following combat and principles that resonate with soldiers, such as "mental toughness," unit cohesion, peer and leader support, and overcoming adversity. The intervention also provides information on common psychosocial reactions to combat. Finally, the

interventions reframe post-deployment difficulties as resulting from effective occupational skills that can become problematic at home if not adapted (e.g., maintaining tactical alertness in combat can lead to hypervigilance at home). Soldiers are encouraged to adapt combat skills for the home environment (e.g., forming close bonds with unit members can translate to forming close bonds with family members).

In a randomized trial with 2297 soldiers following deployment to Iraq, Adler et al. (2009) compared Battlemind debriefing and training to a stress management condition. Among soldiers with high levels of combat exposure, Battlemind debriefing and training resulted in fewer PTSD symptoms, depression symptoms, and sleep problems. Large group Battlemind training participants with high combat exposure also reported lower levels of stigma. These findings support the efficacy of this early intervention for at-risk service members post-deployment. However, it should be noted that a few studies of civilian populations have reported symptom exacerbation following psychological debriefing (Bisson, Jenkins, Alexander, & Bannister, 1997; Cuijpers, Van Straten, & Smit, 2005; Hobbs, Mayou, Harrison, & Worlock, 1996), suggesting the need for further research and cautious application of this approach.

7.3. Resiliency training

"Defender's Edge" represents another preventive intervention that was designed for active duty Air Force Security Forces (Bryan & Morrow, 2011). The program emphasizes resiliency and reframes combat as "an athletic event requiring high levels of physical and mental fitness and endurance (pg. 18)." Skills training is conducted in five 30-minute modules occurring during battle drills, training, and actual missions. The modules consist of "Fatigue Countermeasures" (e.g., sleep hygiene), "Adrenaline Management," (e.g., stress management), "Mission Focus" (e.g., cognitive restructuring, goal-setting), "Killing," (e.g., trauma prevention, grief), and "Mind Tactics" (e.g., social support, distress tolerance). Skills were presented as necessary for "optimal combat performance." The facilitator, a clinical psychologist, participated in the full spectrum of unit activities. This allowed the psychologist to develop a shared experience with service members, to reduce the perception that mental health is disconnected from the unit, and to deliver immediate consultation on a range of health issues. Clinical services were provided in the medical officer's exam office to reduce the stigma of entering the mental health setting. The authors reported that among a squadron of 192 Air Force Security Forces deployed to Iraq, service members found the intervention to be helpful and trustworthy. Unfortunately, no information was provided on the extent to which the training reduced different mental health symptoms.

A similar preventive intervention, Comprehensive Soldier Fitness, focuses on developing psychological resilience and is currently being implemented Army-wide. One component involves training NCOs to be Master Resilience trainers (Reivich, Seligman, & McBride, 2011). As part of this training, service members learn how to develop self-awareness, self-regulation skills, cognitive restructuring skills ("building mental toughness"), and interpersonal/communication skills. Although the intervention is currently in the process of being evaluated, findings have not been published.

Another resiliency-based preventive intervention called "Life Guard: Bringing New Life to the Guard," was based on the principles of Acceptance and Commitment Therapy (ACT; Blevins, Roca, & Spencer, 2011). ACT is a third wave behavior therapy designed to increase acceptance of private experiences (e.g., emotions, thoughts, sensations), increase distance from maladaptive thoughts, and encourage engagement in activities consistent with personal values (Hayes, 2004). In a study of Life Guard, 144 National Guard service members completed a two-hour interactive workshop that was designed to promote resiliency and post-deployment reintegration. The program focused on providing skills a service member could

use to assist fellow service members, thereby reducing the stigma associated with acknowledging the need for personal assistance. The training was administered by a team that included a nurse, a social worker, a psychologist, and a recreational therapist. It incorporated three skill sets: a) Awareness (recognizing the relationship between person and private experience), b) Acceptance (nonjudgmental acceptance of private events, such as distressing memories), and c) Value-Based Living (living in a goal-directed manner). Life Guard was presented in a fashion amenable to the military setting (i.e., densely packed schedules with few times when soldiers are in one location for treatment). Therefore, it was implemented when soldiers were assembled for drills and was condensed into a brief workshop. To increase engagement, PowerPoint presentations were avoided and interactive exercises were emphasized.

In comparison to a delayed intervention control group, intervention participants reported fewer symptoms of depression and greater relationship satisfaction. On the other hand, groups did not differ on PTSD symptoms, substance abuse, and overall mental health functioning. A limitation of this study is that participants were not randomized to condition, and there were differences between groups on variables such as combat exposure, injury, and PTSD. Further research is needed using randomized designs, comparing Life Guard to standard ACT protocols, and conducting long-term follow-up to determine whether such brief interventions can prevent development of mental health symptoms.

In general, the increased use of brief/early interventions such as CSC, Battlemind, Defender's Edge, Comprehensive Soldier Fitness, and Life Guard may help reduce stigma towards mental health problems and treatments, and serve as a "gateway" for seeking more intensive psychotherapy. For example, the study of Defender's Edge reported that 20% of participants voluntarily initiated contact with the integrated psychologist, which sometimes resulted in completion of a course of psychotherapy (Bryan & Morrow, 2011). These interventions also offer an opportunity to focus on early symptom management and arousal reduction, which can increase the effectiveness of later interventions. Furthermore, Battlemind specifically addresses the importance of not letting stigma deter a service member from getting the mental health treatment he or she needs.

8. Adaptations of mental health interventions that may address barriers to care

In addition to early and preventive interventions, several formal mental health treatments have been adapted to address barriers to care in the military context. The interventions that have garnered the most support for treating veterans are grounded in the cognitive-behavioral therapy (CBT) framework. These interventions tend to focus on altering maladaptive thought patterns and behaviors in order to alleviate psychological symptoms. The CBT interventions that have received the most empirical support for the treatment of trauma-related disorders among veterans are Prolonged Exposure therapy (PE) and Cognitive Processing Therapy (CPT) (VA/DoD, 2010). PE involves repeated exposure to traumatic memories and trauma-related cues (Foa & Kozak, 1986). It also incorporates psychoeducation (i.e., common reactions to trauma) and breathing retraining techniques. CPT involves exposure therapy via written narratives of traumatic memories, coupled with modifying "stuck points" or maladaptive beliefs that emerge from the narratives (Resick & Schnicke, 1992). These interventions generally involve 10–20 individual therapy sessions (50–90 min) and are administered by behavioral health professionals. Both PE and CPT have been chosen for widespread dissemination in the Veterans Affairs (VA) healthcare system.

PE, CPT, and other interventions have been adapted in several ways to address the needs of active duty service members and returning veterans. In the following section, we describe these treatment adaptations, how they address barriers to care, and the results

of treatment-outcome studies for these adapted interventions. Treatment adaptations have included: changing service delivery formats, addressing negative beliefs about mental health treatment and symptoms, and tailoring components for military-specific issues. Table 1 summarizes treatment adaptations, barriers/facilitators addressed, and outcomes for studies that included active duty or OEF/OIF veterans.

8.1. Changing service delivery formats

8.1.1. Brief Interventions that are integrated into military and medical settings

A few abbreviated versions of PE and CPT protocols have been evaluated. The use of abbreviated versions of mental health treatment protocols helps address the demands of a deployment environment that involves long work hours, unpredictable schedules, and frequent changes in location. In addition to brevity, interventions need to be flexible to adapt to the changing military environment. For example, treatment may need to be implemented on an altered schedule or in changing locations, including outside of the clinic. Researchers have recommended the use of ongoing needs assessments to assess changing cognitive, physiological, and emotional stresses that vary with the changing demands of the military environment (Reger & Moore, 2006).

These brief, flexible interventions frequently involve integration of mental health providers into military and primary care settings. This change in service delivery format could improve treatment in the following ways: a) reduce stigma, b) reduce the perception of clinicians as "outsiders," c) provide more opportunities for soldiers to interact with service providers, d) educate providers on military culture and duties, e) allow service providers to collaborate with leaders and other professionals, f) encourage mental health and primary care providers to address the comorbid psychological and medical problems that are frequently observed in OEF/OIF veterans (Batten & Pollack, 2008), and f) allow clinicians to incorporate the military environment into exposure exercises (e.g., tactical training and drills allow for safe in vivo exposure; Hoyt & Candy, 2011).

In one of two small studies of abbreviated, combined PE/CPT protocols, 15 active duty OEF/OIF veterans received combined PE and CPT in four to six 30 minute appointments (Cigrang et al., 2011). This intervention employed the Primary Care Behavioral Health model/Behavioral Health Consultation (BHC) model, wherein psychologists were embedded in the primary care setting and served as behavioral health consultants to medical providers. Participants met with behavioral health consultants in the primary care setting biweekly, completed a detailed narrative of the most distressing deployment event, re-evaluated problematic beliefs, and completed in vivo exposure activities. If symptoms were not alleviated by the conclusion of treatment, participants could be referred to specialty mental health care. Treatment completers ($n=10$) improved on PTSD severity, depression, and global mental health functioning. Fifty percent of treatment completers did not meet criteria for PTSD at one month follow-up. Although the dropout rate was higher than civilian PE studies, it was comparable to studies with veterans (e.g., Schnurr et al., 2007). The average pre-follow-up effect size was moderate ($d=.43$), but smaller than the average pre-post effect size for a randomized trial of 65 OEF/OIF veterans who received the standard version of PE in a VA medical center ($d=1.66$; Tuerk et al., 2011).

In a second pilot study of a brief, combined PE and CPT intervention for active duty personnel, Steenkamp et al. (2011) reported significant reductions in PTSD symptoms in a sample of 8 Marines. The intervention was conducted in garrison via six 90 minute individual therapy sessions. Effect sizes were large and comparable to the full PE intervention (Tuerk et al., 2011). Both of these studies were limited by small samples and lack of a control group.

A third study examined an abbreviated version of CPT within a sample of 19 active duty service members (Corso et al., 2009). This treatment also implemented the BHC model, delivering five 30 minute sessions in a family medicine clinic. Other adaptations included providing information on post-deployment reintegration techniques and modifying terminology to be military-specific. Two brief versions of CPT were implemented: a) writing exposure alone, and b) impact statement alone (i.e., identifying and modifying problematic cognitions). These interventions were compared to each other and to a treatment as usual condition. The impact statement condition was the only condition to exhibit significant pre-post improvement on PTSD and global mental health, with a large average effect size ($d=1.47$). Participants in the writing exposure condition reported worse global mental health, which the authors suggest could be due to difficulty implementing exposure therapy in a brief format. This study was limited by a small sample size, high attrition, and a lack of random assignment.

In addition to the adaptations illustrated in the above studies, researchers have described other ways that clinicians have been integrated into the military context. In some cases, uniformed behavioral health providers are used to reduce stigma (Potter et al., 2009). Clinicians can also collaborate with military professionals to improve treatment efficacy by assisting leaders in recognizing the importance of implementing empirically supported treatments (Karlin et al., 2010). Providers may assist commanders in encouraging the receipt of appropriate mental health treatment among unit members. Communication with leaders can additionally reduce the number of occasions where soldiers are unnecessarily removed from their job duties due to misunderstandings about mental illness (Reger & Moore, 2006). Furthermore, clinicians can coordinate with leaders to allow weekly treatment sessions (e.g., practice exposure exercises while in the field; Hoyt & Candy, 2011). In order to facilitate integration into military settings, mental health providers could receive education on military culture, including acronyms, the importance of rank, and the significance of stigma. It may be helpful for clinicians to perform role plays or analyze military case studies as part of this process (Reger & Moore, 2006).

8.1.2. Use of technology

Another way the service delivery format can be altered for the military context is through the adoption of technological advances. This includes the use of virtual reality devices and delivery of mental health treatment via telehealth (i.e., via telephone, Internet, or videoconferencing). Such advancements are expected to reduce the stigma associated with attending sessions in a mental health clinic and to increase willingness to engage in treatment. These advancements may also improve access to care, since they can introduce more flexibility into treatment timeframes and locations, and can even be more affordable (e.g., Internet-based self-help).

8.1.2.1. Virtual reality. Virtual reality exposure therapy (VRE) involves retelling traumatic memories in detail while immersed in a three-dimensional virtual environment that is customized to resemble aspects of the patient's traumatic event. VRE could be useful in reducing the stigma associated with mental health treatment among military personnel, since it does not involve traditional talk therapy. It may also be more approachable for young service members who are experienced with using technology to solve daily problems. Finally, VRE represents a more interactive and engaging treatment format that can address barriers to treatment engagement, such as emotional detachment (Reger & Gahm, 2008).

One study examined the efficacy of 3–12 sessions of VRE when conducted with 24 active duty OEF/OIF soldiers (Reger et al., 2011). The intervention resulted in an overall significant reduction in PTSD symptoms, with 62% of participants reporting a clinically significant change post-treatment. The effect size ($d=1.17$) was large, although

somewhat smaller than traditional PE delivered to OEF/OIF veterans at a VA medical center ($d = 1.66$; Tuerk et al., 2011). Although the Reger et al. (2011) study was limited by lack of a control group, a second study addressed this weakness in the literature by assigning 20 active duty OEF/OIF veterans seeking treatment in naval medical centers to VRE and treatment as usual conditions (McLay et al., 2011). The researchers employed a version of VRE that included up to 10 sessions of graded exposure, physiologic monitoring, and anxiety management skills training. The researchers hypothesized that these treatment alterations allowed soldiers to recognize and control excessive autonomic arousal and cognitive reactivity, facilitating engagement in therapy. The VRE group improved significantly on PTSD symptoms in comparison to the treatment as usual group, and the effect size was large ($d = 1.29$). One limitation of this study is that the treatment as usual condition consisted of a variety of treatment approaches, making it difficult to draw conclusions regarding the efficacy of VRE in comparison to other specific treatments.

8.1.2.2. Telehealth. Telehealth service delivery represents yet another use of technology to adapt interventions for populations who are difficult to access. Therefore, it may help address barriers such as changing duty locations and lack of access to behavioral healthcare providers. A pilot study of 12 OEF/OIF veterans who received PE via telehealth demonstrated PTSD and depression symptom reduction that was smaller but comparable to a comparison group of 35 veterans who received in-person PE (Tuerk, Yoder, Ruggiero, Gros, & Acierno, 2010). Although the study lacked follow-up data and relied on a small sample, pre-post effect sizes were large. A second study randomized 47 primarily OEF/OIF combat veterans to home-based telehealth versus in-person treatment involving 8 individual sessions of PE and behavioral activation. Both conditions resulted in significant reductions in PTSD and depression symptoms (Strachan, Gros, Ruggiero, Lejuez, & Acierno, 2011). Effect sizes were moderate, and telehealth treatment did not significantly differ from in-person treatment.

A third study by Litz, Engel, Bryant, and Papa (2007) included 45 service members with PTSD as a result of attacks on the Pentagon on September 11th or due to combat in Iraq/Afghanistan. Participants were randomly assigned to receive either self-management CBT or supportive counseling, both administered via Internet. Results indicated that both groups improved on mean PTSD ratings, with the self-management completers reporting significantly fewer depression, anxiety, and PTSD symptoms at 6 month follow-up. One drawback of self-management was that participants were less likely to complete treatment (in comparison to supportive counseling). Because more symptomatic participants were less likely to be located at follow-up, it was difficult to fully evaluate the impact of the intervention.

A fourth study delivered group CPT to 13 veterans (38% OEF/OIF) via video conferencing techniques (Morland, Hynes, Mackintosh, Resick, & Chard, 2011). CPT was further modified in this study to exclude the written exposure component, and was delivered twice weekly in 12, 90 minute sessions. Participants were randomized to in-person group therapy or videoconference group therapy. Both groups showed significant reductions in PTSD. No difference between groups was found, suggesting that telehealth service delivery was comparable to in-person treatment. Veterans also indicated high levels of acceptance and satisfaction with the videoconferencing modality.

In conclusion, a growing body of research is demonstrating that technology-based interventions are similarly efficacious to in-person interventions. In addition to the adaptations described above, technology can be used to assist in completing therapy assignments when a soldier is unable to attend regular sessions. For example, imaginal exposure exercises can be recorded on an MP3 player and repeated outside of session. Although no studies have evaluated the impact of technology-based interventions on stigma or service use, one study found that a majority of soldiers would be willing to use

a technology-based approach. Furthermore, 33% of soldiers who were not willing to talk to a counselor in person were willing to utilize a technology-based approach (Wilson, Onorati, Mishkind, Reger, & Gahm, 2008).

8.2. Group formats

A final way to adapt service delivery formats is to employ group therapy as opposed to individual therapy. Group therapy allows providers to increase access to care when resources are limited. Exposure to other group members can also help reduce stigma through normalizing reactions to stressors and providing social support (Foy et al., 2000). Therefore, group therapy formats may help to address barriers to care in the military setting. On the other hand, group therapy may be difficult to implement with active duty soldiers, particularly when the group is intended to be delivered in sequence and is not amenable to shifts in group membership. Furthermore, stigma and confidentiality concerns could discourage soldiers from engaging in treatments involving contact with fellow service members.

In one study of 104 male veterans (64% Vietnam era) in a PTSD Residential Rehabilitation Program, CPT delivered in a 14-session group setting resulted in more symptom reduction than treatment as usual (i.e., group interventions including some CBT elements). Language from the original treatment manual was modified to reflect combat experiences. Improvement was noted in PTSD symptoms, depression symptoms, psychological quality of life, coping, and psychological distress. In the CPT group, 16% of participants were classified as recovered and 41% were classified as improved (Alvarez et al., 2011). The average effect size was small ($d = .12$), and not as large as a study that employed the standard version of CPT at a VA medical center ($d = 1.24$; Monson et al., 2006). This may be due to the group therapy format, or to use of different assessment instruments. Strengths of this study included randomization to condition, use of valid and reliable assessment measures, and adequate sample sizes. Limitations included lack of long-term follow-up, therapist fidelity assessments, and comparison to specific efficacious treatments.

A second study evaluated an abbreviated version of Seeking Safety (SS), a cognitive-behavioral group intervention that integrates treatment for comorbid PTSD and substance use disorders (Najavits et al., 2008). The treatment focuses on interpersonal skills training, self-care, value-based decision-making, case management, coping with triggers, and emotion regulation. A pilot study with a 10 session version of SS was conducted with 14 OEF/OIF veterans attending a VA clinic (Norman, Wilkins, Tapert, Lang, & Najavits, 2010). Although the study reported a high drop-out rate (42%) and did not have a control group, completers were shown to have decreased PTSD, depression, and substance use symptoms. Due to the small sample size, statistical differences were not calculated, but the effect size for the treatment group was relatively large ($d = .76$). The authors noted the importance of addressing readjustment to civilian life and the need for social support from other veterans. They reported that veterans were more likely to engage in substance use treatment if they were first treated in a PTSD clinic and then referred to SS, or if they were allowed a few sessions to "try out" SS. They also noted that SS served as a gateway to more intensive treatment. Future studies need to employ RCTs with larger samples to establish the efficacy of SS with OEF/OIF service members, and to determine whether this intervention can be successfully adapted for active duty populations. In addition, the Norman et al. (2010) study suggests that further adaptations are needed to improve retention rates.

More research is needed to compare group therapy to individual therapy formats, with a particular focus on which approach can most effectively address barriers to care among military populations. Studies are also needed to determine whether group therapies can be effectively applied to active duty populations.

8.3. Addressing negative beliefs about mental health treatment

Several interventions have developed ways to frame techniques in less stigmatizing language, and to provide opportunities for service members to incorporate information that disconfirms their negative beliefs about mental health treatments and providers (i.e., Adler et al., 2009; Alvarez et al., 2011; Bryan & Morrow, 2011; Steenkamp et al., 2011). In the brief PE/CPT intervention described above, researchers avoided stigmatizing language by labeling the intervention as "Adaptive Disclosure" and "training" (Steenkamp et al., 2011). Researchers also avoided the use of the terms "PTSD," "patient," and "treatment." In other CPT interventions, language was modified to remove complex jargon and stigmatizing phrases such as "faulty thinking patterns" (Alvarez et al., 2011; Morland et al., 2011).

Several preventive and resiliency-based interventions worked to reframe perceptions of treatment and mental health symptoms. As discussed in the context of the Defender's Edge program, psychotherapy can be presented as a way to learn life skills that contribute to optimal combat performance. Behavioral health skills can be tied to pre-existing job skills sets, such as physical conditioning and survival training (Bryan & Morrow, 2011). Battlemind training reframed symptoms as common reactions to occupational stressors such as combat exposure (e.g., Adler et al., 2009). Information on the frequency of traumatic stress reactions following combat can also be provided to normalize these reactions. Finally, adversity can be presented as a necessary mechanism through which growth and development occurs (Bryan & Morrow, 2011).

The Battlemind intervention incorporated several of these elements, and was able to demonstrate decreased stigma among large group participants with high combat exposure (Adler et al., 2009). The group CPT study that used modified language (Alvarez et al., 2011) only demonstrated small treatment effects. Although the brief PE/CPT study used non-stigmatizing language and demonstrated large effects, it was limited by small sample size (Steenkamp et al., 2011). Defender's Edge incorporated many reframing elements, but was not evaluated in regards to symptom or stigma reduction (Bryan & Morrow, 2011). Therefore, future studies will need to determine whether these techniques decrease stigma and facilitate mental health treatment-seeking and recovery.

In addition to the treatment adaptations described above, education can be provided prior to initiating treatment to help dispel negative beliefs about treatment-seeking. Because Army behavioral health providers report that the majority of soldiers receive some form of CBT and/or evidence-based pharmacotherapy (Wilk et al., 2011), soldier education should specifically focus on dispelling misperceptions about these treatments. For example, it will be important to explain the rationale and typical techniques used in CBT approaches to help reduce concerns and questions about the efficacy, timeframe, and nature of these treatments. Furthermore, service members can be provided with information on common medications and their side effects, addressing concerns about their addictive qualities or likelihood of impairing job performance. They could also be provided with information about the negative consequences of not seeking treatment, and how treatment can ultimately decrease their risk of separation from the military (Hoyt & Candy, 2011).

8.4. Incorporating targeted components into mental health treatments

Another means of concentrating on issues specific to military service members is to incorporate targeted components into existing interventions. For example, both the military version of the Cognitive Processing Therapy manual (Resick, Monson, & Chard, 2007), and the brief PE/CPT intervention employed in the Steenkamp et al. (2011) pilot study, incorporated segments to address traumatic grief and survivor's guilt. The Defender's Edge and Battlemind interventions addressed military-specific issues such as readjustment to

civilian life. Interventions may also consider addressing other common issues for service members, including anger management, emotional engagement, and relational problems.

8.5. Relapse prevention

One treatment adaptation that has been recommended, but not evaluated, is incorporation of relapse prevention components. Soldiers who have experienced high combat exposure, such as those who have deployed to the OEF/OIF conflicts, are at risk for chronic PTSD and trauma-related mental health problems. Furthermore, many soldiers enter the military with risk factors for the development of mental illness. In addition, active duty members are frequently placed back in situations where they will encounter further trauma exposure. Therefore, relapse prevention is likely to be an important component of military-adapted interventions. For example, soldiers in treatment can be encouraged to develop plans and coping strategies for high-risk situations (e.g., using relaxation skills or seeking social support when experiencing symptoms of PTSD or depression). "Booster" sessions and continued access to a mental health professional can also be utilized (Creamer & Forbes, 2004).

9. Other interventions designed to facilitate mental health treatment-seeking

In this section we describe programs that are not typically categorized as mental health treatments or treatment adaptations, but are intended to facilitate mental health treatment-seeking and engagement. These include screening and early intervention programs, and programs that enlist leaders and unit members in stigma reduction and treatment referral. These programs and corresponding barriers that may be addressed are summarized in Table 1.

9.1. Screening and early identification

One recommendation for facilitating receipt of needed mental health treatment is to implement broad screening of all service members during and after deployment. These assessments can help identify at-risk individuals, with an emphasis on risk factors specific to the military setting (e.g., multiple trauma exposure, traumatic brain injury, poor social support). One study describes the use of such procedures at Madigan Army Medical Center at Joint Base Lewis-McChord (Hoyt & Candy, 2011). Soldiers are screened the first week after deployment as part of an Army-wide Soldier Readiness Program. Soldiers are required to screen for behavioral health issues and establish a plan before going on leave or being released from active duty. They are screened again between 90 and 180 days as part of the Army-wide Post-Deployment Health Re-Assessment (PDHRA). At Madigan, soldiers receive face-to-face contact with a behavioral health provider to reduce stigma and barriers such as not knowing where to get care or schedule an appointment, as well as lack of trust in mental health providers. Clinicians also provide psychoeducation regarding mental health issues and use motivational interviewing to discourage minimization of mental health symptoms. For those who do not seek treatment on their own, uniformed providers are assigned to command consultation positions, and they field calls from concerned commanders regarding soldiers with problematic behaviors. These soldiers can then be referred for intervention.

Other programs, such as RESPECT-Mil, institute screening and referral for mental health problems in primary care settings, which represents another non-stigmatizing means of accessing large groups of soldiers (Engel et al., 2008). This requires education of primary care providers on mental health issues and referral resources. In the RESPECT-Mil program, a nurse care facilitator also ensures continuity of care by assisting with follow-up appointments, symptom monitoring, and enhancing the interface with mental health services. Although broad screening and referral procedures

are designed to facilitate treatment-seeking, their effect on mental health service use remains to be evaluated.

9.2. Enlisting fellow unit members to assist service members in need of treatment

A few interventions entail active involvement of the service member's unit in implementing measures to address mental health problems and facilitate further treatment seeking. Unit Watch is an intervention in which, following recommendations of a clinician, the soldier's command team works to prevent suicidal and homicidal behavior by searching the soldier's belongings and removing dangerous items, prohibiting access to alcohol and drugs, continuously observing the soldier, and ensuring that the soldier returns to treatment (Payne, Hill, & Johnson, 2008). Although this intervention has not been evaluated, the intent is to maintain the soldier in his/her unit and reduce the likelihood of psychiatric hospitalization, which is associated with a high degree of stigma.

Another example of how military members can be enlisted to reduce stigma and assist fellow soldiers with mental health needs is through the Buddy-to-Buddy program. This program involves having trained soldiers regularly check in with peers who have returned from combat, assess their mental health needs, and connect them with needed resources (Greden et al., 2010). One study reported that over 20% of participating soldiers were referred to formal treatment by their Buddy (Greden et al., 2010).

10. Conclusions and future directions

Current military service members are the recipients of a high degree of combat exposure, resulting in a host of mental health problems. Despite high rates of these problems, treatment-seeking is relatively low. Barriers include stigma, logistical difficulties, negative perceptions of mental health treatment and its consequences, and military values such as the need to maintain mental toughness. In addition to barriers to treatment-seeking, there are several barriers to effectively implementing mental health interventions with service members (e.g., difficulty with emotional engagement). However, the prevalence of these barriers and their relation to treatment outcomes are poorly understood. In addition to identifying the roles of these barriers, interventions are needed to reduce barriers and facilitate treatment-seeking among military personnel who could benefit from mental health treatment. These might include large group workshops that are primarily focused on stigma reduction, changing attitudes towards mental health treatment, providing information about mental health treatment, enlisting peer support, screening for mental health symptoms, and connecting at-risk military personnel with service providers. Policy changes may also be needed to: a) increase access to providers and behavioral health facilities, b) reduce concerns regarding confidentiality, c) increase unit cohesion and support for treatment-seeking, and d) mitigate the effects of mental health treatment-seeking on career trajectories.

Several brief, early and preventive interventions have been developed that can address barriers to care such as stigma, job duty interference, negative attitudes towards mental health treatment, and poor symptom recognition. More research is needed to determine whether these interventions reduce barriers to care and prevent development of severe symptoms. Multiple adaptations of formal mental health treatments have also sought to address barriers to treatment-seeking and engagement. These adaptations include incorporating flexibility and technology into the typical service delivery formats, abbreviating standard treatment protocols, integrating clinicians into the military and primary care contexts, providing treatments in group formats, providing psychoeducation and reframing perceptions, and including targeted components. Virtual reality and telehealth-based interventions are the only treatment adaptations

that have been evaluated against control groups. Support for their efficacy was found, suggesting that these interventions possess promise for overcoming barriers such as stigma, engagement, and access to care. Finally, interventions that involve widespread screening and increasing peer support can potentially improve early symptom recognition and facilitate receipt of needed treatment. Again, these interventions require further evaluation to establish their utility.

In conclusion, continued research is needed in multiple areas, particularly regarding mental health interventions and their adaptations to the military context. First, randomized controlled trials that compare adapted interventions to standard protocols are required. Research is also needed to determine whether adaptations to existing treatments will improve their efficacy and reduce barriers to care in active duty settings. Furthermore, several empirically supported treatments exist for trauma-related problems within the civilian population, but have not been applied to OEF/OIF or active duty populations. These treatments include the full version of ACT (Hayes, 2004), motivational interviewing for substance use disorders (Miller & Rollnick, 2002), behavioral activation for depression (Lewinsohn, 1975), Dialectical Behavior Therapy (Linehan, 1993), and Couples Therapy. Another set of interventions that have established efficacy for the treatment of trauma-related disorders in veterans, but not active duty soldiers, are pharmacological treatments. In general, the availability of pharmacotherapy can help reduce barriers to care because it requires less contact with a mental health professional. However, the fact that soldiers often harbor concerns about medication side effects (Britt et al., 2011) and the efficacy of pharmacotherapy implies the need for increased education on these interventions for military personnel. In order to address the methodological weaknesses of the extant research, future studies should include a) larger samples that are more representative of the military population, b) randomized intervention conditions, c) treatment fidelity assessments, d) control for co-occurring pharmacological treatment effects, and e) long-term follow-up. Researchers will also need to develop ways to address challenges to data collection with active duty samples, including difficulties with treatment engagement, retention, and follow-up.

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Blended courage: Moral and psychological courage elements in mental health treatment seeking by active duty military personnel

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Blended courage: Moral and psychological courage elements in mental health treatment seeking by active duty military personnel

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We propose that seeking mental health care in an environment with heightened stigma may combine elements of both psychological and moral courage. Interviews of 32 active duty US Army personnel about their process of seeking current mental health care were analyzed for themes of voluntary action, personal risk, and noble or worthwhile goals (benefits). Risks and benefits were divided into internal risks and benefits, characteristic of psychological courage; and external risks and benefits, characteristic of moral courage. Concerns about external risks were themes in all narratives, while concerns about internal risks were themes in only about half of narratives. Both internal and external benefits of treatment were themes in approximately three-quarters of the narratives, whereas doubts about internal (but not external) benefits were also expressed at a similar rate. Thus, participants described an act of blended courage, with social risks of moral courage taken for wellness goals of psychological courage.

Keywords: blended courage; treatment seeking; military, moral courage; psychological courage; stigma

Specific subtypes of courage have been proposed from the earliest days of scholarly interest in the topic by both philosophers (e.g. Plato, 1961) and psychologists (e.g. Lord, 1918). Distinctions between physical courage, shown in physically dangerous situations, and moral courage, shown when standing up to others for what is right, have a lengthy history. More recently, scholars have proposed a third type of courageous action centered on efforts to overcome physical, mental, or emotional limitations, labeled alternatively *psychological courage* (Putman, 1997, 2004) or *vital courage* (Lopez, O'Byrne, & Petersen, 2003). Although these types of courage have been proposed as fuzzy sets allowing for blended types (e.g. Lester & Pury, 2011), only limited empirical work has been done to examine actions with features of more than one type of courage. In this paper, we examine a particular voluntary action – seeking needed psychological treatment while serving as an active duty member of the armed forces – as a potential example of a blended courage type.

The three components of courage

According to Rate (Rate, 2010; Rate, Clarke, Lindsay, & Sternberg, 2007), the three components of all types of courage consist of: (a) volition (making a voluntary choice), (b) risks, and (c) a noble or worthwhile goal, or pursuing a benefit. Throughout this paper, we will be concerned with *process courage*; that is, the way in which an individual goes about actually choosing and executing a

risky action for a valued goal, rather than *accolade courage*, or the extent to which observers attribute courage to a particular action (Pury & Starkey, 2010). Whereas an action high in process courage might entail a risk for anyone taking that action, it might just as well be risky for only that particular individual at that particular time. The noble value of the goal might be immediately apparent to anyone, or its value, again, might be unique to the particular actor at that particular time (see Pury, Kowalski, & Spearman, 2007). Hence, process courage might or might not describe actions that meet the high bar required for public praise and awards.¹ Rather, process courage involves an individual deciding to voluntarily take a personally risky action to pursue a goal he or she sees as valuable.

Types of courage

Rate's (Rate, 2010; Rate et al., 2007) conception of courage, which involves both personal risks and noble goals, provides a framework for understanding different types of courage in terms of risk – goal pairs. In this approach, we argue that the universe of risk – goal pairs is lumpy and that working towards particular types of goals makes encountering specific types of risks more likely. In other words, courageous acts that involve a particular type of goal may be more likely to involve one type of risk than another. The prototypic physical courage situation involves saving someone else from a clear and present physical danger by voluntarily entering that physically

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dangerous situation, pairing rescue from physical danger with facing that same physical danger. Prototypic moral courage involves standing up to powerful others for what you believe in, with the risk that the others will treat you poorly. Prototypic psychological courage involves facing unpleasant truths or unpleasant treatment experiences in order to attain wellness.

Differences in risks based on type of courage have been supported in the literature. Asking participants to report a time in their lives when they acted with courage, Pury et al. (2007) found three factors of risks and difficulties encountered. These factors differed according to the type of courageous action described, with physical courage actions high in physical risks/difficulties, moral courage high in emotional/social difficulty, and risk to the image of the actor, and psychological courage high only in emotional/social difficulty.

Differentiating psychological and moral courage

In this present study, we examine treatment-seeking for psychological problems. Although psychological courage can describe actions as diverse as leaving home for educational goals to dealing with a family health crisis (Pury et al., 2007), the concept was initially developed to describe the fortitude needed by psychotherapy patients to seek and complete treatment (Putman, 2004), particularly when that treatment involves experiencing the unsettling thoughts, memories, and emotions the patient has been avoiding. Rachman (1990), a pioneer in behavior therapy as well as behavioral conceptions of courage, describes the courage required for exposure therapy – the client is required to face exactly those situations that provoke extreme fear. Moreover, they are required to stay in the situation until their fear declines. Risks in psychological courage are primarily internal – facing the loss of psychological stability for personal growth. Psychological courage, then, involves both risks and goals that are internal to the individual.

Moral courage, on the other hand, involves risks of social rejection that are primarily external to the person. This social rejection can be from those immediately around the actor (in the case of a high school student standing up to friends teasing a peer) to facing societal disapproval (in the case of a public figure taking an unpopular stand). When social rejection comes on the job, the individual may face damage to his or her career and loss of current employment (e.g. Rothschild & Miethe, 1999). The goal of moral courage, standing up for what is morally right, is based on the individual's sense of how the external world should be and how she or he ought to function in it. Thus, in contrast to the internal risks and goals of psychological courage, the risks and goals of moral courage are external.

Blended courage

In real life, the risks and goals occurring with any potentially courageous action may not represent a "pure" type. As part of a large multi-method study of types of courage, Lopez and colleagues (Lopez et al., 2010, Study 4) found evidence for a blend of psychological and moral courage. Although theories suggest that psychological courage is required to overcome the internal risks associated with mental health treatment-seeking, Putman (2004) makes a philosophical case for the societal stigma of admitting a psychological disorder being similar to the societal risks faced in moral courage. Indeed, a large amount of research has documented the stigma associated with possessing a mental illness (Corrigan, 2004; Corrigan & Watson, 2002; Link, Phelan, Bresnahan, Stueve, & Pescosolido, 1999) as well as the stigma associated with seeking treatment for mental health problems (Vogel, Wade, & Haake, 2006; Vogel & Wester, 2003).

Although there is a stigma associated with seeking mental health treatment in society at large, that stigma is magnified in the military, where an emphasis on resilience and toughness makes seeking treatment even more difficult (Britt & McFadden, 2012). In addition to concerns about being embarrassed or viewed differently by their peers and leaders as a result of seeking treatment, military personnel may also be concerned with the implications of seeking treatment for obtaining promotion and even for remaining in the military (Britt, 2000; Hoge et al., 2004).

In the present study, we examined blended courage within the context of US Soldiers who sought mental health treatment while on active duty. We interviewed active duty Soldiers who were currently in mental health treatment about the process by which they decided to seek and obtain treatment and about their perceptions regarding barriers and facilitators to obtaining treatment (Zinzow, Britt, Pury, & Raymond, 2012). We used a semi-structured interview format to maximize the chances that we would not miss a key barrier or facilitator merely because it was not included in a population of quantitative questions. We coded barriers and facilitators based on Rate's three necessary components of courage – volition or a voluntary choice to seek (or to accept) treatment, risks of getting treatment, and goals of getting treatment. Because getting treatment occurred in the past and the larger focus of the study was on barriers and facilitators, we asked participants about the desired end state of goals – benefits, which can be present or absent – rather than about goals, which can be present when they are both likely and unlikely to be met. Risks and benefits were further divided into internal risks and benefits, characteristics of psychological courage; and external risks and benefits, characteristics of moral courage. We hypothesized that treatment seeking in an

environment particularly high in stigma and low in privacy should require elements of both psychological and moral courage.

Methods

Participants

Participants were 32 active duty US Army soldiers (29 male, 3 female) who were currently receiving mental health treatment at a clinic on a large Army post. Most ($n = 25$) described their racial or ethnic background as white, with the remaining being Black ($n = 2$), Hispanic ($n = 2$), and Other ($n = 3$). The mean age was 29.0 ($SD = 6.5$), and there were 17 junior enlisted (E1–E4), 14 senior enlisted (E5–E9), and 1 officer. Mean years of service was 8.0 ($SD = 5.9$), and the majority of participants ($n = 29$) had deployed on at least one combat operation to Iraq or Afghanistan. At the time of the interview, 18 participants screened positive for PTSD, and 3 screened positive for an alcohol problem (Zinzow et al., 2012). Recruitment ended after data saturation was achieved (in terms of participants not indicating new information in their responses; see Onwuegbuzie & Leech, 2007).

Procedure

Mental health staff at the clinic informed the soldiers they were treating about the study and interested soldiers provided their contact information to study personnel to arrange a one-on-one interview. Soldiers signed an informed consent document in the presence of an ombudsman. Interviews were conducted by the four PhD-level authors (all civilians) in a private office on the military base. Interviews lasted approximately 45–90 min.

A semi-structured format was used for the interviews, with questions focused on the experience of seeking and obtaining the current mental health treatment. The interview was introduced to Soldiers as follows:

The purpose of the present interview is to better understand the key factors in determining whether soldiers get needed mental health treatment, to better understand what occurs during treatment, and the risks and benefits associated with receiving mental health treatment. We also are interested in your thoughts regarding what can be done to better encourage soldiers to get needed help. We are going to use the information we get from these interviews to better identify barriers and facilitators of treatment seeking so as to better design interventions to facilitate the receipt of needed treatment

Interviewer guide questions included the following: *Please describe how you came to be in mental health treatment. What benefits did you see to getting treatment? Did you experience any doubts of your own about seeking treatment?* The complete interviewer guide

is presented in Appendix 1. Because it was a semi-structured interview, these questions were guides to the topics to be covered.

Digital audio recordings were made of the interviews and professionally transcribed. The researchers reviewed the transcripts to develop coding categories based on identified themes. Themes related to facilitators of and barriers to treatment were reviewed, and separate codes were developed for individual Volition (High, Low, or Shared), Risk (Internal vs. External), and Benefit (Internal vs. External). Participants discussed risks and benefits as either something that was present or desired (e.g. a risk that fellow soldiers would view someone in treatment as a slacker for getting treatment, a benefit that treatment is expected to reduce symptoms) or something that was absent or minimal (e.g. a lower risk of social rejection by having a loved one say that it is OK for them to get treatment, an absent benefit seen when a buddy gets treatment and does not get symptom relief). Thus, risks and benefit categories were further described as High (present or desired) or Low (absent or reduced). Each interview was coded by two trained coders, who were psychology graduate students or advanced psychology undergraduates. Percent agreement between coders for each specific type of volition, risk, or benefit ranged from 0.97 to 0.56, with a mean of 0.75 ($SD = 0.12$). Disagreements were resolved by a PhD third coder. Specific barriers and facilitators are discussed elsewhere (Zinzow et al., 2012), including additional barriers and facilitators not relevant for courage, such as logistical barriers.

Results

Volition

Table 1 presents Volition themes. Consistent with treatment seeking as a courageous response, the majority of participants indicated some degree of personal volition in seeking treatment. Themes indicating the participant made a voluntary choice to seek or continue treatment (High Volition) were present in 69% ($n = 22$) of the interviews. These themes included making an initial appointment on his or her own, describing treatment as a personal responsibility, and putting self-care before military concerns. Themes indicating that the participant had, at least at one point, been made to attend treatment by command or lied to avoid treatment (Low Volition) were present in 41% ($n = 13$) of interviews. Of those with a Low Volition theme present, 54% ($n = 7$) also had a High Volition theme present. This finding reflects the fact that participants may have made the decision to seek or not seek treatment at multiple points during their Army careers, as well as the fact that even mandated treatment works via activities and exercises that require cooperation and engagement by the patient. Referrals from within the Army (Shared Volition) were described

Table 1. Coded volition themes in interviews of active duty US soldiers currently in mental health treatment (N = 32).

General theme	Theme	Sample quote	Interviews containing theme	
			n	%
High volition		I went there voluntarily.	22	69
	Self-referral; sought appointment on own	It's still up to individuals themselves to recognize it within themselves, to go, "I think I might have an issue."	11	34
	It's a personal responsibility	One thing I told myself was that I deserved the help and I do. That's my biggest thing, is I deserved the help, I earned it.	7	22
	Need to put self-care before military	I don't believe in divorce, I won't get a divorce. This is my only marriage.	5	16
	It's a priority/Important	They just knew that I wanted the help and they knew ... with the questionnaires and everything that ... that I'd answered so that they wouldn't let me leave until I had something done.	2	6
Low volition	Decided to be honest on mental health screening		2	6
	Ordered to attend treatment by commander or leader	While I was in [country] I experienced a lot of traumatic things that a normal human being shouldn't have to deal with. And when I got back from [country] I was kind of ordered to go seek behavioral health	13	41
	Chose to lie on mental health screenings to avoid treatment	Yeah I lie about that and I should not. So I mean to this day I mark stuff about certain stuff, I'm not going to say, but certain stuff I don't put "yes" to, I always put "no", which it should be "yes".	9	28
Shared volition	Referred by medical provider	He started talking to me about Army One Source and that is how I actually went through to get into treatment.	5	16
	Referred by commander or leader	I felt suicidal at that time and then I went back to mental health well actually I went to my commander and told him ... And they referred me to mental health.	8	25
	Leadership identified problems	Well, my chain of command recommended me because I was going through a difficult time	5	16
	Referred by chaplain	I went to see the chaplain and the chaplain referred me to here.	2	6

by 47% (n = 15) of participants. While falling short of the Low Volition of a direct command, a referral none-the-less indicates a very strong suggestion by an external agent that a specific action – seeking treatment from a specified clinic – should occur.

Risks

Coded Risks are presented in Table 2.

Internal risks

High Internal Risks, consistent with psychological courage, were mentioned by a bare majority (53%,

n = 17) of participants. These risks included concerns about medication side effects, the self-stigma of being "crazy" if one needs treatment, and embarrassment that treatment is needed. Low Internal Risks, indicating that either a particular type of internal risk was unlikely or that an internal safety factor was present, were mentioned by only 6% (n = 2) of participants. Overall, risks were somewhat consistent with the risk of psychological or emotional distress expected in psychological courage.

External risks

High External Risks, consistent with moral courage, were mentioned by 100% (n = 32) of participants. These

Table 2. Coded risk themes in interviews of active duty US soldiers currently in mental health treatment ($N = 32$).

General theme	Theme	Sample quote	Interviews Containing Theme		
			<i>n</i>	%	
			17	53	
<i>High internal risks</i>	Medications will have negative side effects	Some of them get treatment and they go to the medical side and get all these pills. There are some guys I see, they just don't even function at work.	5	16	
	Mental illness means you are "crazy"	I'm the crazy guy.	4	13	
	Embarrassment	Rumors float around about seeing mental health.	3	9	
	Don't want to depend on others	I don't want to inconvenience anybody else.	2	6	
	Will get prescribed meds but don't want them	I don't want prescriptions.	2	6	
	Explaining story to a new provider is emotionally taxing	And they switch them so often. I talked to four different providers now for three visits ... Like you have to start all over ...	2	6	
	Mental illness means you are "weak" or "a slacker"	I think it is kind of a copout. I think that I want to go to behavioral health because I don't want to deal with the real Army.	1	3	
	Treatment will make symptoms worse	Mental health pill making you worse than what you started off with ...	1	3	
	Showing emotions is difficult or harmful	I didn't know if it was going to make me worse or not.	1	3	
	The nature of treatment is unknown	I did not know I could call at any point and time and at least talk to someone on the phone.	1	3	
<i>Low internal risks</i>	Seeking treatment for something everyone goes through means you are "weak"	He is just weak. Weak, crazy, can't handle it. That is what I would say sometimes.	1	3	
	It is weak to show emotions	I was raised, the man provides for the woman; the man doesn't cry, the man doesn't shed a tear, you know. Men are strong and that's the image I try to put out there.	1	3	
	Treating a mental illness is like treating a physical illness	It's kind of like I know I'm not like sick but I know something is wrong with me and I need help to fix it. And I see them as someone who fixes things, like a doctor.	2	6	
			1	3	
	Treatment by a caring mental health professional	I will be honest with you, it was (provider) because he talked to me as a, as a person, not a subject or as a patient.	1	3	
	<i>High external risks</i>	Stigma from military culture	They think if they go to behavior health they will get automatically looked down upon for going there.	32	100
		Lack of career advancement	Like just, you know you got a lot of condition ... a lot of serious issues, like, now you cannot go be a drill sergeant because you got too many issues.	19	59
		Stigma from other soldiers	Other soldiers will think that they are weak or will hold that against them.	13	41
		Leadership not supportive	My platoon sergeant would not let us schedule an appointment unless it was within 48 h from the date and that combined with the fact that the treatment that I was receiving was often mocked.	11	34
		Leaders believe soldiers in mental health treatment are malingering	My command sergeant major starting cracking down on everybody that was going to	10	31
			8	25	

(Continued)

Table 2. (Continued).

General theme	Theme	Sample quote	Interviews Containing Theme	
			n	%
	Differential treatment on the job (e.g. different duties, not trusted)	appointments because he thought we were trying to get out of (work). When we came back they told us we had so much time but we already had orders to deploy again so he thought we were trying to get out of having to deploy again.	7	22
	Stigma from leadership	They started blocking you from favorable action. Being pulled into your battalion command sergeant majors office and being told you did not go through anything worth needing treatment so the fact that you are going to treatment is a waste of tax payer dollars.	6	19
	Treatment itself would interfere with job duties	There's a saying in the military that you can't be a leader if you have PTSD or combat stress.	5	16
	Lack of trust in leadership	I was like "Don't none of these NCOs care, so why bother talking to them?" I don't talk to none of these NCOs (in) my company 'cause they don't care.	5	16
	Lack of confidentiality within chain of command	A lot of units have that gossip from the top to the bottom.	4	13
	Needs of unit/mission must come before own needs	I would sometimes put my personal problems aside just to help out the team, neglecting... helping myself.	4	13
	Stigma from family and friends	The only thing was my parents, with like the meds and stuff. Just that whole stigma.	4	13
	Discharge from Army	'Cause I did not want them to try to kick me out of the military	3	9
	Peers would know	And there is the possibility of them talking, you know ... Not purposely but somehow letting something out of people's sessions and it did happen.	3	9
	Leadership unclear about duty assignment for soldiers in treatment	They supported me pretty much, but they really needed me to deploy again. And the first thing they wrote when they referred me to mental health was "Can he deploy?"	3	9
	Sees treatment as shirking duties, burdening others by taking time off	Because they need personnel and you kind of feel like you are letting the team down.	3	9
	Would be seen by others as malingering	I think my company is..."He's only going to behavior health", or "He's only going to the doctor so he can get out of work."	3	9
	Stigma from society	Somebody is going to be like "Oh you're crazy, you're going to behavior health."	3	9
	Commander would know	If they knew the chain of command would find out, they wouldn't go.	2	6
	Others would know	I am very superstitious of Chaplains. Due to the confidentiality of it.	2	6
	Other career problems	'Cause everybody thinks you're going to lose your security clearance and you might have to change to change your MOS.	1	3
			31	97
			30	94
			25	78
Low external risks (all)				
Low external risks (social support)	Support or encouragement from family or significant other	And my wife was like, "You know you are having problems with this, you are having problems with that. Go get help."	13	41
	Support or encouragement from peer or battle buddy	I have a very supportive team on my hands		

(Continued)

Table 2. (Continued).

General theme	Theme	Sample quote	Interviews Containing Theme	
			n	%
	Support or encouragement from leader	(Leadership) said, you know, we support you, get the help you need.	9	28
	Support or encouragement from other friend	We're good friends we're close and we talked each other about everything, if we have issues. We try to help each other out and he's another one that was like "Hey, you should go seek help."	8	25
<i>Low external risks (other)</i>	Role model who shared experience of treatment without negative effects to career	My first sergeant, when I had that sit down with him and I was getting my treatment and everything was going south ... sitting down in the office with him, he told me he had gotten help a few times before. That just kind of encouraged me just to keep doing what I was doing, you know what I mean.	6	13
	Leadership approval of mental health	My sergeants were very, very easy to say "Hey, if you need to seek counseling or if you need to talk to somebody, I am here" or "Let me know if you need to go seek counseling; I'll let you get off work."	4	13
	Knowing or exposure to someone who went through treatment without negative effects	By no means coming here will hold you (back).	3	9
			1	3

risks included stigma for seeking treatment from the military culture, lack of career advancement, and stigma from other soldiers. A variety of other External Risks were also mentioned. Low External Risks, indicating that a particular external risk was absent or not likely, or that an external safety factor was present, were present in 97% ($n = 31$) of the interviews. These were predominantly safety factors of social support or encouragement from family or others; Social Supports were mentioned by 94% ($n = 30$) of total participants. Aside from Social Supports, Low External Risks included role models who sought treatment without negative career effects (an indication that external risk was not present) and leadership approval of mental health issues (which might indicate lack of external risk, safety factor of social support, or both); mentioned by 13% ($n = 6$) of participants. Overall, results were strongly consistent with concerns about the external social risks expected in moral courage, but also revealed that the Soldiers we interviewed had support systems that may have mitigated the effects of these risks.

Benefits

Table 3 presents coded Benefits.

Internal benefits

Themes of High Internal Benefits for therapy, or goals consistent with psychological courage, were present in 75% ($n = 24$) of the interviews. These included the reduction of symptoms causing personal distress, not wanting symptoms to get worse, and recognizing the importance of mental wellness. Concerns about Low Internal Benefits of treatment – that treatment would not reduce symptoms or would fail to yield mental wellness – were present in 84% ($n = 27$) of the interviews. These include a belief that the participant can deal with problems on his or her own, substance use to deal with the problem, and denial of problems, among others. Thus, participants expressed both goals typical of psychological courage and reasons why those goals might not be obtained or were not valuable to begin with.

External benefits

High External Benefits, or goals more consistent with moral courage, were present in 72% ($n = 23$) of interviews. While still involving the individual (instead of third parties only), these benefits touched on ways that

Table 3. Coded benefit themes in interviews of active duty US Soldiers currently in mental health treatment (N = 32).

General theme	Theme	Sample quote	Interviews containing theme		
			n	%	
<i>High internal benefit</i>	Symptoms causing personal distress	And at that time, I just wanted to talk to somebody. Get some things off of my chest.	24	75	
	Don't want symptoms to get worse	Pretty much to prevent myself from going down the wrong road.	14	44	
	Recognize importance of mental wellness	I was tired of being miserable.	11	34	
	Treatment will help	Just figure if I can get help, maybe the nightmares will start to diminish.	9	28	
	Knowing or exposure to someone who went through treatment and symptoms improved	I've seen a few people go and do whatever they do to get their assistance and I do notice drastic improvements.	6	19	
	Had successful treatment in the past	(Treatment) helped me out a while ago, maybe this will help me out.	5	16	
	Role model who shared experience of treatment that improved symptoms	Our last Sgt. Major who just left, he was in treatment and he would tell the whole battalion, "I'm in treatment. If you got a problem, go."	3	9	
	Exposure to someone who did not get treatment and had a poor outcome (e.g. suicide)	I've seen (untreated mental illness) affect them; where they are late to work with the sleeping. They were just not the same person.	2	6	
	<i>Low internal benefit</i>	I can deal with problems on my own/ I'm too strong to need treatment	It was me being strong and trying to say, "Hey, I am going to deal with this on my own."	27	84
		Used substances to deal with problem	I did the drinking and partying and all that other stuff.	13	41
Denial of problems		I don't view myself as being crazy, I think that, I think that the rest of the world has a problem, not me.	11	34	
Don't trust or connect with providers, so treatment won't work		I just didn't know if they would ever understand what I had been through.	10	31	
Providers don't really care		It's just them checking the block and saying "Well, I did my part" or "I am getting my paycheck".	7	22	
Mental toughness or being hardened to stressors will get participant through symptoms		You don't need to go to mental health. You can do this yourself.	4	13	
Confusing diagnostic system		You're confused, because you have PTSD, (then) you don't have PTSD but you have this. So you are hearing two different things from mental health personnel.	4	13	
Don't think treatment will work		Not knowing if it is really going to work out this time.	2	6	
Provider will be changed frequently, requiring treatment to start over and reducing efficacy		Starting (again) from scratch ... starting from scratch isn't easy.	2	6	
Symptoms won't improve		I was going to stop because I mean I don't feel I'm getting any better.	2	6	
Providers are burned out and won't help	She was just tired of listening to people.	1	3		
Previous treatment didn't help	Did an initial interview and then my provider gave me Prozac and it didn't really work so I stopped taking that. I didn't see the effect.	1	3		

(Continued)

Table 3. (Continued).

General theme	Theme	Sample quote	Interviews containing theme	
			n	%
High external benefit	Have been through worse in the past	I just thought, "Hey, this is stress, anger, whatever, I'm going to deal with it. You know it's not that bad.	1	3
	This is a normal reaction and treatment won't help	It was nothing ... I am used to everything being hard and messed up.	1	3
	Want to be a better person for family	I need to know that I'm trying to do something, not just for me but for my son. I want to be here for him.	23	72
	Symptoms causing impairment in relationships or isolation from others	I know I am physically and mentally not there with my wife. It's like I used to be a lot more loving, more emotional with her.	11	34
	Symptoms creating a risk for self or others	I was going in because, okay, I really want to choke all these people. They know I really want to choke all these people. I should probably go talk to somebody so I don't choke all these people, for their sake and for mine.	8	25
	Treating symptoms will help career	When they started talking about me losing rank I decided I had to do something about it.	7	22
Low external benefit	Symptoms causing impairment at work	When you don't sleep your entire work just goes downhill rapidly.	3	9
	Treatment will not improve functioning	n.a.	2	6
			0	0
			0	0

symptoms affect the individual's behavior with others, and include wanting to be a better person for one's family, symptoms causing impairment in relationships or isolation from others, and symptoms creating a risk for self or others. No interviews had themes of Low External Benefit, although theoretically a concern that treatment would not improve relationships or reduce job impairments, for example, would be possible.

Discussion

Mental health treatment seeking while on Active Duty is characterized by the defining elements of courage. In this study, Rate's (Rate, 2010; Rate et al., 2007) three defining features of courage – volition, personal risk, and worthwhile goal – were prominent themes. While previous research has described the courage needed to seek treatment (e.g. Gans, 2005; Putman, 2004), to our knowledge this is one of the first empirical demonstrations that individuals in treatment describe their experience in terms of volition, risks, and goals (here described as their desired end state – benefits).

These risks and goals do not fall neatly into a psychological or moral courage category. Career and other social risks of moral courage were universally expressed

by our sample. Expressed stigma, particularly from military peers and leadership, as well as harm to one's military career, were common concerns. Ironically, one form of this stigma, a belief that seeking treatment indicates psychological weakness, indicates that others see seeking treatment as cowardly (very low accolade courage) while simultaneously increasing the process courage required to successfully enter treatment.

Instances in which social support, rather than stigma, was stated by important others were described by all but two of the participants. Thus, both social stigma and social safety signals appear to play an important role in getting into treatment for our sample. This overarching theme of social consequences of an action is most similar to moral courage (Greitemeyer, Fischer, Kastenmüller, & Frey, 2006).

Internal risks, on the other hand, were expressed by barely half of participants. These risks involved concerns that treatment would involve unpleasant emotions, the need to accept something negative about themselves, or venturing outside one's emotional comfort zone (e.g. Pury et al., 2007). Few participants described safety signals for these concerns. Thus, while concerns about the risks of psychological courage were not uncommon, they were not as universal nor as frequently combatted as the external risks of moral courage.

Goals were more equally divided among external and internal benefits. The external benefits described all involved improvements in the participants' interaction with the external world – family and significant others, not harming others, and work. While all of these benefits were somewhat more concrete than the more abstract moral concerns of moral courage, such as fixing a wrong, they all represent a way in which the individual is striving to be a better person. Moreover, while these goals were present for the majority of participants, not a single participant explicitly described a concern that therapy might not let them achieve them.

Instead, both the internal goals of psychological courage – predominantly better emotional health (High Internal Benefits) – and concerns that treatment might be either unnecessary or ineffective in symptom alleviation (Low Internal Benefits), were common. They centered on the individual's internal experience of treatment and seem most related to psychological courage (see Putman, 2004). Notably, Shelp (1984) defined courage in medical settings as including the possibility that the desired goal might not be met. In this case, mention of concern that benefits might not occur may also add the risk of futility to stated risks. Taken together, both the high endorsement of internal benefits and the high level of concern they might not be reached is consistent with psychological, rather than moral, courage.

Thus, seeking treatment in a heightened atmosphere of stigma might best be thought of as an act of blended courage, with the social risks of moral courage being taken for the wellness goals of psychological courage. We think this has several important implications.

For courage theory, our data provides a concrete, more empirically-derived example of blended process courage. The necessary features of courage described by Rate are voluntary action, personal risk, and noble goal (Rate, 2010; Rate et al., 2007). While individual volition seems likely to be unchanging from type to type, risks and goals seem to come in natural pairs in the environment, but not always. If I want to save someone from physical danger, I might need to face that same physical danger myself, thus exhibiting classic physical courage. Except when I need to face a different risk: to keep my friend from risking both his and other lives by driving drunk, I might need to face the social risk of taking away his keys. If I want to stand up to protect the rights of others, I might need to face the social risk of people hating me, thus showing moral courage, except when that hate turns into the genuine physical risk of being injured or killed for my (social) actions. Thus, we suggest, traditional types of courage might be best thought of as loosely-coupled types of goals and risks.

As courage research transitions into interventions to foster process courage, it may be useful to characterize

the goals and risks of the courageous action being fostered separately rather than lumping them together as in physical, moral, or psychological courage. Boosting psychological courage may seem a desirable method of increasing needed mental health treatment-seeking, but this may only work insofar as the intervention helps someone see the importance of the goal of mental wellness. Stressing techniques to overcome the risks of psychological courage – baring one's soul to a stranger, for example, or enduring psychological distress during treatment – would address concerns expressed by only about half of our sample. On the other hand, techniques that might help to reduce or overcome the risks present in moral courage – losing face, losing social standing, facing career stagnation – could potentially address concerns expressed by all of our participants.

Of course, this study relies on content analysis of interview data. Only the presence or absence of specific themes was analyzed, and future research should incorporate quantitative measures of risks and goals. Moreover, our design was retrospective. Prospective, or even concurrent, data collected before or during treatment-seeking would be needed to determine the extent to which our data represents the live thoughts and experiences of treatment seekers compared to their memory of that action. Our sample was also homogenous: all individuals interviewed were active duty US Army soldiers stationed at a particular post during the same limited time period. The perceived risks and benefits of seeking treatment may be different in different circumstances. Finally, because participants in our sample were all currently in treatment, it may be that they have already overcome many potential risks of treatment and experienced its benefits. They also might not represent all potential treatment seekers.

Overall, the results of this study suggest that blended courage exists and that we might most usefully think of courage in terms of types of risks and types of goals, rather than overall types of courage. Doing so will enable us to pinpoint areas to advance both courage theory and courage interventions.

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Note

- Note that similar concerns about assessing the extent of psychological wounds (as well as enemy intent) surround the issue of issuing the Purple Heart for PTSD and other psychological injuries of war (Alvarez & Eckholm, 2009).

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Appendix 1. Interviewer guide

- Please describe how you came to be in mental health treatment. (follow-up questions, if unclear: What led to your decision to seek treatment? How did you come to believe that you should get treatment?)

- (2) What type of mental health treatment did you receive? (e.g. psychotherapy, pharmacotherapy, chaplain, peer support groups, treatment by doctor/psychiatrist/psychologist, etc.) (follow-up questions: how long were you in treatment? How many sessions did you attend? Do you know what your diagnosis was?)
- (3) Before this, had you ever been in treatment before for any other problem? (follow-up with how many times, how long ago, how long in treatment, was it successful?)
- (4) How long was it between when you first thought you might need to get treatment and when you actually got treatment? What happened in the meantime?
- (5) How long were you experiencing problems or symptoms before you decided to get treatment?
- (6) Why did you decide to get treatment?
- (7) What benefits did you see to getting treatment?
- (8) Did you have support from others in seeking treatment? (if yes, What was your relationship to them? How did they offer support?)
- (9) What did you think treatment would be like? How has it been / was it different?
- (10) Did you put a name or diagnosis with the problems you were having before you went in for treatment, or did you just know something was not right? (if yes, Was your diagnosis the same one that the treatment provider thought you have/had?)
- (11) Did you encounter any problems from the Army when trying to get treatment? (if yes, Please describe them. How did you overcome problems?)
- (12) Did you encounter any problems with family members or friends when trying to get treatment (if yes, Please describe them. How did you overcome those problems?)
- (13) Did you encounter any problems or concerns with the healthcare system when seeking treatment? (e.g. difficulty making appointments, difficulty finding needed services, perceived lack of eligibility, and expense)
- (14) Did you have any other difficulties accessing the treatment you needed? (e.g. scheduling conflicts, time constraints, and transportation)
- (15) Did you experience any doubts of your own about seeking treatment? (if yes, Please describe them. How did you overcome those doubts? (Follow-up: What about any beliefs that prevented you from seeking treatment sooner or might have initially hindered seeking treatment? (e.g. pride in self-reliance, focus on job and family functioning, providers will not understand/believe, treatment not helpful, treatment is for the weak/crazy, and treatment is only for extreme problems))
- (16) Did you encounter any other obstacles in seeking treatment? (if yes, Please describe them. How did you overcome those obstacles?)
- (17) Before you decided to get treatment, did you know anyone else who had similar problems? (if yes, were they in the Army/military? What was your relationship to him/her/them? How did their symptoms affect them? How did you see your symptoms compared to theirs- better, worse, or the same? Did they get treatment? How did you see treatment affecting him/her/them?)
- (18) Before you decided to get treatment, did you know anyone (else) in the Army who sought treatment? (if yes, What was your relationship to him/her/them? How did you see treatment affecting them, either on or off duty?)
- (19) Before you decided to get treatment, did you know anyone outside of the Army who sought treatment? (if yes, What was your relationship to him/her/them? How did you see treatment affecting them? Were they in the military at the time?)
- (20) Is there anything in particular that you told yourself or that led you to get treatment?
- (21) Is there anything in particular that others did that led you to get treatment?
- (22) Is there anything in particular that the Army did that led you to get treatment?
- (23) What do you think was the single most helpful thing in getting you in to treatment?
- (24) What do you think was the biggest barrier you faced in getting into treatment?
- (25) If there was one thing that you could tell someone who needs treatment but is not getting it, what would it be?

Barriers and Facilitators of Mental Health Treatment Seeking Among Active-Duty Army Personnel

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The purpose of the current two-phase study was to comprehensively identify the barriers and facilitators of mental health treatment seeking among active-duty service members. For Sample 1, focus groups were conducted with a general sample ($n = 78$) of United States soldiers. For Sample 2, interviews were conducted with soldiers who had sought mental health treatment ($n = 32$). Transcripts were coded using Atlas.ti software (Berlin, Germany), and descriptive analyses identified key themes. Factors identified by this study that have been underinvestigated in previous research included medication concerns, discomfort with discussing mental health problems, beliefs promoted by military culture, positive leader behaviors, and witnessing treatment seekers' experiences. Common barriers included career concerns, stigma, treatment concerns, leadership problems, and practical barriers. Common facilitators included social support, leadership support, and perceived symptom severity. Findings suggest that treatment-facilitating interventions should reframe treatment-inhibiting perceptions, change leader behaviors, and employ testimonials.

Keywords: service use, help seeking, barriers, facilitators, military

As a result of recent military operations in Iraq and Afghanistan, current military personnel are likely to have deployed multiple times and to have experienced high-intensity combat exposure during the course of these deployments (United States Department of Army Medicine, 2011). Repeated exposure to potentially traumatic events places service members at high

risk for developing mental health disorders, including posttraumatic stress disorder (PTSD), depression, and substance-use disorders. Studies of service members returning from Iraq and Afghanistan have indicated that approximately 20–44% meet criteria for a mental health diagnosis (Kim, Thomas, Wilk, Castro, & Hoge, 2010; Seal et al., 2009). Despite the significant mental health needs of recently deployed service members, only a fraction of those with psychiatric problems (13–50%) use mental health services (Hoge, Auchterlonie, & Milliken, 2006; Kehle et al., 2010; Tanielian et al., 2008). To address the mental health needs of this population, it is important to understand barriers and facilitators of mental health treatment seeking.

Although a number of studies have investigated specific factors associated with military personnel seeking needed mental health treatment, this area has been hampered by the lack of qualitative research examining the determinants of treatment seeking from service members' perspectives. In the present study we conduct qualitative research with active-duty soldiers to thoroughly assess their perceptions of the barriers and facilitators of treatment seeking among

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military personnel using two different samples. The first is a general sample of soldiers in an infantry division, and the second is a sample of soldiers who made the decision to seek mental health treatment while they were on active duty. We expect to find support for barriers and facilitators that have been identified in previous research, but also to identify additional factors that have not been investigated.

Factors affecting treatment seeking can be understood within the behavioral model of service use, which posits the existence of predisposing, enabling, and need factors (Andersen & Newman, 1973). Predisposing factors are pre-existing factors that contribute to an individual's likelihood of seeking services, such as demographics and health beliefs. Enabling factors either impede or enhance treatment seeking, and include factors such as income, insurance, family support, and community resources. Need factors include both perceived and actual need for services, such as perceived symptom severity and mental health diagnoses.

The low rates of mental health treatment seeking in military populations suggest that barriers to care likely inhibit service use. Stigma has been found to be the most prevalent known barrier to mental health service use in military samples (Britt, 2000; Hoge et al., 2004; Kim et al., 2010), and may be a predisposing determinant of service use. Two types of mental health stigma have been identified: public stigma, which involves negative reactions from other people toward mental illness; and self-stigma, which is the internalization of public portrayals of mental illness, and the belief in those portrayals (Corrigan & Watson, 2002). In studies of active-duty soldier and Operation Enduring Freedom/Operation Iraqi Freedom (OEF/OIF) veteran populations, more than half of soldiers endorsed concerns about being seen as weak, being treated differently by leadership, losing the confidence of fellow soldiers, and harming their careers (Britt, 2000; Hoge et al., 2004; Kim et al., 2010). Existing studies have relied on only four to six items to assess stigma, such as "It would be too embarrassing" and "I would be seen as weak." It is unclear whether other stigmatizing attitudes toward mental illness exist among service members, such as concerns that one will be labeled as "crazy," or a burden to others. In addition, little research has assessed self-stigma in military personnel (Skopp

et al., 2012). Previous studies have also included fears of losing security clearance or general "harm to career" as stigma-related barriers to care. However, career concerns may not all be related to perceived stigma and it is possible that career concerns represent a more complex set of barriers. Furthermore, measures of stigma employed in studies of military personnel have not analyzed the extent to which service members actually hold stigmatizing beliefs about those who seek mental health treatment. For example, do service members view others who seek treatment as detracting from the operational mission of the unit? These types of questions have not been assessed with existing measures.

Practical barriers also hinder treatment seeking, and can be framed as the negative side of the behavioral model of service use's enabling factors. Common practical barriers endorsed among military personnel include trouble getting time off work for an appointment, difficulty scheduling an appointment, and financial concerns (Hoge et al., 2004; Kim, Britt, Klocko, Riviere, & Adler, 2011). Again, these studies relied on structured rating scales with a limited number of items. It is possible that other practical barriers exist, such as frequent moves requiring shifts in providers, or difficulty attending multiple appointments when prolonged treatment is required. For example, McLay and colleagues (2011) conducted a treatment-outcome study for PTSD among active-duty personnel, and suggested that fluctuating assignments and frequently changing duty stations contributed to high treatment-dropout rates. In addition, leader behaviors, such as not allowing time off for treatment or lack of knowledge about mental health resources, may contribute to these barriers. Because both stigma and practical barriers have been significantly associated with treatment seeking among U.S. Army soldiers, it is important to develop thorough assessments of these constructs (Britt, Greene, Castro, & Hoge, 2006).

Beliefs about mental illness and treatment comprise a third set of barriers to care. Studies have suggested a few treatment-inhibiting beliefs among active-duty soldiers, such as believing one can handle the problems alone and believing the problem is not severe enough to warrant treatment (Britt et al., 2011; Kim et al., 2011; Visco, 2009). Such beliefs may be en-

couraged by military culture, where soldiers are expected to "tough out" difficult emotions (Vogt, 2011), but the role of military culture has not been assessed by existing scales.

Negative perceptions of mental health treatment may also inhibit treatment seeking among soldiers, including beliefs that mental health professionals are untrustworthy, treatment does not work, treatment should be a last resort, or that medications will have negative side effects (Hoge et al., 2004; Kim et al., 2011; Sayer et al., 2009). The literature on mental health treatment seeking in civilian populations suggests that individuals also avoid treatment due to treatment fears, such as the fear of how a mental health professional might treat him or her, as well as the fear of discussing painful emotions (Vogel, Wester, & Larson, 2007). Confidentiality concerns may also arise due to policies that allow commanders to be informed of a soldier's mental fitness for duty (Milliken, Auchterlonie, & Hoge, 2007). It is possible that lack of knowledge about treatment can contribute to these fears and concerns. However, these factors have not been previously identified or assessed in studies of military personnel. Although most of these factors represent predisposing factors for service use, perceptions of illness severity and recognition of symptoms relate to perceived need for treatment.

Although less commonly studied, several factors may increase the likelihood of soldiers using mental health services. One set of treatment facilitators relates to enabling factors in the environment. For example, one study found that active-duty soldiers who reported unit cohesion and skilled leaders were less likely to report practical barriers and stigma toward treatment seeking (Wright et al., 2009). A second study indicated that reductions in negative leader behaviors reduced perceived stigma, whereas positive leader behaviors were associated with fewer practical barriers (Britt, Wright, & Moore, 2012). Another set of facilitators relates to perceived mental health needs, including trauma exposure, symptoms that interfere with functioning, and recognition and acceptance of a disorder (Fikretoglu, Brunet, Schmitz, Guay, & Pedlar, 2006; Sayer et al., 2009). A third set of facilitators relates to beliefs about mental illness and treatment. These were described in a small qualitative study of Vietnam and OEF/OIF veterans with PTSD, which identified be-

liefs that treatment is socially acceptable, helpful, and provided by a trustworthy system (Sayer et al., 2009). Another set of facilitators described in the civilian literature relates to the presence of a social network that is accepting and encouraging of treatment seeking (Vogel et al., 2007). Individuals who know someone who sought help or had a support person that recommended treatment have been found to be more likely to seek treatment (e.g., Dew, Bromet, Schulberg, Parkinson, & Curtis, 1991; Tijhuis, Peters, & Foets, 1990). Finally, the anticipated utility of seeking help has been found to significantly predict attitudes about seeking mental health treatment (Vogel, Wester, Wei, & Boyesen, 2005). These factors have yet to be identified in military populations.

In sum, little research has been conducted on the facilitators of mental health treatment seeking among active-duty soldiers, and most researchers of barriers to treatment have employed predetermined rating scales and have included a limited number of items. Thus, it is likely that there are additional barriers and facilitators to be discovered. Finally, most studies did not simultaneously examine predisposing, enabling, and need factors. Researchers studying culture particularly favor naturalistic open-ended questions and recommend them when (a) there may be additional unknown factors associated with a problem (e.g., Bernard, 2006; LeCompte & Schensul, 2010), (b) when not all settings and combinations of those factors are known (e.g., LeCompte & Schensul, 2010), and (c) when one is interested in the processes by which a decision is made (e.g., Bernard, 2006). We believe that all of these conditions are met by the current state of research into barriers and facilitators of treatment seeking in active-duty military culture. Thus, we employed open-ended questions to elicit soldiers' unconstrained nominations of predisposing, enabling, and need factors. We believed that this methodology would yield a more holistic and expanded picture of the barriers and facilitators of treatment seeking in the military and might be used to create more comprehensive scales. We used focus-group and interview methodologies with two groups of active-duty soldiers: (a) a general sample and (b) a sample of current treatment seekers.

We aimed to answer the following research question: What are the perceived barriers and

facilitators of mental health treatment seeking among active-duty soldiers seeking treatment and not seeking treatment? We hypothesized that we would identify many of the barriers and facilitators found in previous research with military personnel, including public stigma, practical barriers, beliefs about treatment, self-reliance, and perceived mental health needs. Based on civilian literature and related research with military personnel, we also hypothesized that our findings would reveal the following factors: self-stigma, discomfort with treatment, specific career concerns, confidentiality concerns, military cultural factors, leadership behaviors, anticipated utility of treatment, and social network support. Finally, our methodology may reveal additional barriers and facilitators beyond those measured in previous research. Identification of these factors is important, not only to develop more comprehensive assessment instruments, but also to determine targets for intervention that could improve the likelihood that military personnel will get mental health treatment when needed.

Method

Sample 1: General Sample

We recruited a general sample of 78 active-duty Army personnel through chain of command at a large U.S. Army post in the Southeast. The infantry division issued an operations order, and unit leaders recruited participants from different rank categories. We requested that groups include both soldiers from combat-arms units and combat-support units. Three focus groups were conducted with each of four rank categories, resulting in a total of 12 focus groups. Each focus group consisted of 3–8 soldiers. The rank categories included junior enlisted (E1–E4, $n = 19$), noncommissioned officers (E5–E7, $n = 19$), company-grade officers (O1–O3, $n = 21$), and field-grade officers (O4–O5, $n = 19$). The majority of participants were White (64%), followed by Black (13%). The majority of participants were male (80%), the mean age was 31.1 ($SD = 6.9$), mean years of service was 9.3 ($SD = 6.3$), mean number of combat deployments was 1.8 ($SD = 1.2$), and 91% had been on a combat operation in the last 10 years.

The focus groups were conducted by the four study investigators during September, 2011. Participants signed an informed consent form in the presence of U.S. Army ombudsman. Focus groups followed a semistructured interview guide that assessed barriers and facilitators of mental health treatment seeking. To maximize the chances that themes were not limited by item content, questions were all open-ended. Sample items included, "What factors do you feel may influence a soldier to seek treatment?" "What makes it easier for soldiers to seek treatment when they need it?" and "Many soldiers who experience psychological problems do not seek treatment for their difficulties. Why do you think this is the case?" Other questions assessed the roles of stigma and organizational support in treatment seeking, beliefs about mental health treatment, and perceptions of mental health professionals. Potential open-ended follow-up probes were included to be used as needed (e.g., "How much do attitudes of friends and family members serve as barriers to treatment seeking? What are the beliefs about how it will affect job performance?") Sessions lasted approximately 60–90 min.

Audio recordings were made of focus-group sessions, which were later transcribed. The four study investigators reviewed each of the transcripts and independently identified common themes in the data. The investigators started with a coding scheme based upon the themes that have been addressed previously in the research literature, and then added novel themes that came up in the focus groups. The themes were pooled and codified, and the coding scheme underwent several revisions based on feedback from each investigator and repeated reviews of the transcripts. Definitions for each code are presented in Table 1a and Table 1b. Four graduate student research assistants were trained on the coding scheme and performed content analysis on the transcripts. Two research assistants coded every transcript for half of the codes, and two research assistants coded every transcript for the other half of the codes. Codes were assigned using Atlas.ti (Berlin, Germany) software. It was possible for quotations to be coded in more than one category. Mean percent agreement between coders for the codes included in this study was 74%. Disagreements were resolved by the study investigators. Demographic information and codes for each focus

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Table 1a
Barriers of Mental Health Treatment Seeking Identified During Focus Groups With Soldiers

Themes	Enlisted (n = 6)	Officers (n = 6)	Codebook definition	Sample quotations
Career concerns	6	6	Concerns about harm to career <ul style="list-style-type: none"> • Lack of advancement • Discharge • Differential treatment (e.g., different duties, held on location longer/shorter, not trusted by other unit members) • Interference with job duties 	I know people who have been going to mental health, and then they have issues in their professional area because that comes back and some of them lose their career . . . and got moved to other areas.
	6 4	6 4	Soldier's personal beliefs that mental health problems/treatment seeking reflects negatively on oneself, such as beliefs that he/she is <ul style="list-style-type: none"> • Crazy • Weak • A slacker • Faking 	Some people, I believe, will never go unless they are referred to go by their command. They've either been in the Army too long, or they themselves see it as a weak gesture to go. They personally will never go get mental health, regardless of what's happened in their life or on deployment, they will not go get help.
Public stigma	6	4	Leadership, other soldiers, or other people perceive mental health problems/treatment seeking to mean something negative about the soldier, such as perceptions that the soldier is <ul style="list-style-type: none"> • Crazy • Weak • A slacker • Faking 	Most people hear it from family, friends, or other soldiers that they work with that it could be weakness.
	6	5	Don't want to talk to others about problems <ul style="list-style-type: none"> • Dissatisfied with past treatment • Don't think treatment will work • Know there will be a big delay in getting treatment • Medication side effects • Get prescribed medications when don't want them • Don't trust/connect with providers • Not knowing how long treatment will take • Providers are burned out • I won't be treated for primary presenting problem • Providers outrank patient 	Mental health makes people think "He's crazy. I can't trust him." After a while soldiers just get frustrated and they're like "Well obviously they can't fix it, they're just going to continuously medicate me on whatever it is, I continuously have . . . side effects. So I'm just going to deal with it [on my own]"

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Table 1a (continued)

Themes	Enlisted (n = 6)	Officers (n = 6)	Codebook definition	Sample quotations
Leadership problems	6	5	<ul style="list-style-type: none"> Lack of confidentiality within chain of command Lack of trust in leadership (i.e., don't go to leaders for help) Perceptions from leadership that soldiers are trying to "get out of work," "whine," "malingering" Leadership too busy with high tempo to recognize problems/provide support Leadership unclear about ramifications of treatment (e.g., how much time will this soldier need off? What duties can I assign him/her?) Schedule availability (for soldier) Limited availability of providers Fast job tempo—too pressed for time to complete mental health screens, make appointments, etc. Concerns about shirking duties, burdening others by taking time off Financial concerns 	<p>[Leaders] don't actually care about the soldier anymore, they don't communicate. They just watch them self-destruct and don't do anything for that soldier any more. And I see that a lot with leadership now. So, it starts even as low as us being uninformed, that we don't get the help from the people we're supposed to look up to.</p> <p>It takes a long time for rehabilitation and the treatment process is not in and out. It's a matter of the time it takes and the time that takes you away from work.</p>
Practical barriers	5	5	<ul style="list-style-type: none"> Not answering honestly on mental health assessments, so problems aren't identified 	<p>If I was the soldier, to me, the privacy would be a big issue . . . I'd want to go knowing that I could just keep it between me and the person and not have to get my whole chain of command involved. So I think [confidentiality is] probably a big one for a lot of people.</p> <p>[Reintegration] is really the worst time to ask me [assessment questions]. They're not going to tell you. I could tell you all this stuff that's wrong with me, or I could go unwind for 30 days. I think I'll just unwind for 30 days, and then if I still feel anything, I might tell you. Because you're just sitting there like 'no, no, no' [to all the questions]. Nothing's wrong with me.</p> <p>Everywhere you look, they put the image of . . . soldiers . . . just being strong, heroes, warriors, protectors of America . . . They put you in such a positive light so if they need to seek help, they just feel weak and not living up to that image of a strong soldier.</p>
Confidentiality concerns	6	3	<ul style="list-style-type: none"> Concerns that peers, leaders, or others will find out about treatment seeking or mental health problems 	
Lack of honesty on mental health assessments	4	5		
Military beliefs	3	5	<ul style="list-style-type: none"> Mental toughness, hardened to stressors/emotions Everyone else has been through something as hard or worse; don't acknowledge the problem because it's seen as normal 	

(table continues)

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Table 1a (continued)

Themes	Enlisted (<i>n</i> = 6)	Officers (<i>n</i> = 6)	Codebook definition	Sample quotations
Substance use	4	3	Soldiers using substances to deal with the problem in a way that inhibits treatment seeking	Drugs were kind of a problem and that was more of an outlet for a soldier I was dealing with. There were mental problems related to a previous deployment. He . . . wasn't able to cope, but his outlet was the use of marijuana, primarily. It was one of those things that he just refused to try to get the help he needed.
Lack of peer support	2	5	<ul style="list-style-type: none"> • Lack of social support for the soldier (that inhibits treatment seeking) • Peers' perceptions of soldier malingering when getting treatment 	Young males, 18- or 19-year-old males: it's like a bullpen. They beat each other up, and don't give each other any slack. If you say, "I'm having a rough time; I think I need to go talk to the chaplain," by-and-large, you have to catch flack . . . you're still going to get busted on, especially by your peers. [Soldiers think that] they don't need treatment, that they can handle it on their own. . . . not realizing they are having an issue and coping with it in a different way.
Perceptions of mental health symptoms/treatment	2	3	<ul style="list-style-type: none"> • Can deal with it on your own • I'm too strong to need it. • Other perceptions that inhibit treatment seeking 	A lot of soldiers don't have the information. They're scared to even get information because if I get the information, then [everyone is] going to be like, "something's wrong with me."
Lack of information	2	2	<ul style="list-style-type: none"> • When to get treatment (e.g., waiting until problems are severe) • Nature of treatment • Who to call if need treatment • Where to go 	They'll start segregating themselves to a degree. And then, you know, just more problems end up building.
Self-isolation	2	2	Soldiers isolate themselves from others, inhibiting treatment seeking	I think you almost have an even bigger problem, among [soldiers who want to get out after 4 years] because they say "I'm gonna be out soon" you know what I mean, so "I'll be away from all this and I won't need it."
Other	2	3		

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Table 1b
Facilitators of Mental Health Treatment Seeking Identified During Focus Groups With Soldiers

Themes	Enlisted (n = 6)	Officers (n = 6)	Codebook definition	Sample quotations
Leadership support	5	6	<ul style="list-style-type: none"> • Allow soldiers time off to seek treatment • Schedule flexibility • General support of treatment seeking • Provide information on where/when to seek treatment • Role model who has had treatment • Leaders identify problems/refer soldiers to treatment 	<p>I think one of the things that really helps is when a senior leader, who has been through it and got help, is willing to give a testimony to the larger group . . . somebody . . . who is successful . . . saying, "Look, I had a moment there when I wasn't doing well, I reached out and got help and it helped me."</p> <p>If your wife wants you to go get treatment because of the issues that you're having at home, it will help. It will help influence your decision to seek treatment. Usually, it will push beyond even [if] you're worried about what your chain of command might think. If people don't think there is help available then they're not paying attention because the Army has put a lot of time and a lot of effort and a lot of pressure on leaders to ensure that soldiers know that all of that is available and to allow soldiers to go to it . . . When I was a company commander and in my time here, I have not seen an issue where someone was not allowed to go to an appointment because there was something else going on.</p> <p>I found it usually takes some kind of, an incident . . . that impacts their life that they end up having to go get help. You know getting a DUI, getting into trouble somewhere</p> <p>I think it's a valuable resource actually, especially in a combat environment there's enough stress out there as it is that if people need a way to let that out, I think it's a valuable resource.</p>
Social support	5	5	<ul style="list-style-type: none"> • Family/spouse encouragement • Peer/battle buddy encouragement • Having a trusted person to talk with 	
Logistics	1	3	<ul style="list-style-type: none"> • Knowing where to get treatment • Schedule availability 	
Symptoms interfering with life	2	2	<ul style="list-style-type: none"> • The problem is severe enough to significantly interfere with the soldier's life 	
Treatment beliefs	1	2	<ul style="list-style-type: none"> • Seeking treatment • Is a way to take care of yourself • Won't harm your career • Is like treating a physical health problem • Will work 	

(table continues)

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Table 1b (continued)

Themes	Enlisted (n = 6)	Officers (n = 6)	Codebook definition	Sample quotations
Knowing who providers are	1	1	Knowing who the treatment providers are	Having a behavioral health rep down at the brigade helps [facilitate access to care], and then having that person always out, always circulating with the units. That way you may not want to be like, "I have to go schedule something with that person at that person's office where someone may, you know, see me," as some may be worried. But, that [rep] is always out and you can just [have] a short discussion with that person [who is] just moving through a unit area. I think [that treatment is] a last measure. Meaning, something might happen and that soldier might have received some type of corrective counseling and been directed to go seek counseling . . . He was told to [by his command].
Other	4	4		

group were entered as variables in an SPSS database. Descriptive statistics were employed to aggregate the data.

Sample 2: Treatment Seekers

We recruited a sample of 32 soldiers who were currently seeking mental health treatment from the behavioral health clinic on post. Potential participants were informed of the study by mental health professionals at the clinic and interested participants were contacted by a member of the research team to be scheduled for an interview at a private location on base. Participants included 17 junior enlisted, 14 senior enlisted, and one officer. The participants in the majority were White (78%) and male (91%). The mean age was 29.0 ($SD = 6.5$), mean years of service was 8.0 ($SD = 5.9$), mean number of combat deployments was 1.7 ($SD = 0.9$), and 91% had deployed on a combat operation in Iraq or Afghanistan.

Interviews were conducted by the four study investigators between August, 2011 and February, 2012. Participants signed an informed consent form in the presence of a U.S. Army ombudsman. A semistructured interview guide assessed barriers and facilitators of mental health treatment seeking. Questions were primarily open-ended; when close-ended, they were followed by open-ended probes. Sample items included "What led to your decision to seek treatment?" and "What do you think was the biggest barrier you faced in getting into treatment?" Close-ended questions asked participants whether they had experienced any problems from the Army, friends, family, the health-care system, doubts of their own, practical barriers, or other obstacles when they sought treatment. Follow-up questions asked participants to describe the problems and how they overcame these barriers. Items also assessed whether other people or the Army facilitated participants' treatment seeking. Sessions lasted approximately 60–90 min. Soldiers completed a questionnaire including the PTSD Checklist (Weathers, Litz, Herman, Huska, & Keane, 1993) and the Two-Item Conjoint Screen (TICS) for alcohol-use problems (Brown, Leonard, Saunders, & Papasouliotis, 2001). Screening criteria for PTSD were met by 56%, and 9% screened positive for alcohol-use problems.

Audio recordings of the interviews were transcribed. As with the previous sample, the four study investigators independently reviewed each of the transcripts to identify common themes, and a coding scheme was developed based on key themes in the data. The investigators began with a coding scheme based upon previously identified barriers and facilitators of treatment seeking, and then modified that scheme as additional factors were identified in the interviews. The coding scheme underwent several revisions based on feedback from each investigator and repeated reviews of the transcripts. Definitions for each code are presented in Table 2a and Table 2b. Two research assistants were trained on the coding scheme and performed content analysis on the transcripts. Each research assistant coded all codes for each transcript. Codes were assigned using Atlas.ti software. It was possible for quotations to be coded in more than one category. Mean agreement between the coders included in this study equaled 75%. Disagreements were resolved by the study investigators. Demographic information and codes for each interview were entered as variables in an SPSS database. Descriptive statistics were employed to aggregate the data.

Results

Sample 1: General Sample

Barriers. Table 1a provides the most frequently identified barriers to treatment seeking among the focus groups, as well as sample quotations from participants in the group that reflected the barrier. Frequencies were reported separately for focus groups with enlisted members and focus groups with officers. The most frequently endorsed barriers were career concerns, public stigma, treatment concerns, and leadership problems.

Key career concerns included worries that treatment seeking would hinder advancement or lead to discharge from the military. Other concerns included different treatment from unit members or leaders (such as being assigned less-desirable duties), time needed for treatment interfering with job duties, and unduly burdening other unit members who completed work assignments missed for appointments.

Both self-stigma and public stigma were also described. Self-stigma included internalized be-

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Table 2a
Barriers of Mental Health Treatment Seeking Identified in Interviews With Treatment-Seeking Soldiers

Themes	Junior enlisted (n = 17)	Senior enlisted/officer (n = 15)	Codebook definition	Sample quotations
Practical barriers	16	14	<ul style="list-style-type: none"> • Lack of schedule availability for soldier • Limited availability of providers • Long wait times to schedule an appointment • Long wait time in between appointments • Wait time in the waiting room • Fast job tempo--too pressed for time • Concerns about shirking duties, burdening others by taking time off • Financial concerns • Lack of continuity--soldier moved around • Lack of continuity--providers frequently changed • Concerns about changing providers • Don't want to talk to others about problems • Dissatisfaction with past treatment • Don't think treatment will work • Know there will be a delay in getting treatment • Worried about medication side effects • Concerns about being prescribed medication even if they don't want it • Don't trust the provider -- treatment won't work • Don't trust the provider -- treatment will cause harm • Providers don't care • Providers are burned out • Don't know how long treatment will take • Concerns about not being treated for presenting problem • Concerns symptoms will be worse after treatment • Won't get symptom relief • Providers out-rank the patient • Showing emotions in treatment will make things worse • Only able to access military providers • Problems with civilian providers • Taking time out of the day other than work time • Confusing diagnostic system 	<p>They have so many cases and so few [providers] that it's kind of hard to see everybody, so you don't feel like you are getting too much resolved.</p> <p>I just didn't know if they would ever understand what I had been through... If they haven't been there or experienced it then how do they know the reasons why I have the problems that I have?</p>
Treatment concerns	13	12		

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Table 2a (continued)

Themes	Junior enlisted (n = 17)	Senior enlisted/officer (n = 15)	Codebook definition	Sample quotations
Public stigma	11	13	Leadership, other soldiers, family/friends, other people, or society perceive mental health problems/treatment seeking to mean something negative about the soldier, such as perceptions that the soldier is <ul style="list-style-type: none"> • Crazy • Weak • A slacker • Faking 	I could hear [the Sergeant] talking about how much of a burden I was That I am a profiler. That now I am going to mental health and all this stuff.
Leadership problems	11	10	Lack of confidentiality within chain of command <ul style="list-style-type: none"> • Lack of trust in leadership (i.e., don't go to leaders for help) • Perceptions from leadership that soldiers are trying to "get out of work," "whine," "malingering" • Leadership too busy with high optempo to recognize problems/provide support • Leadership unclear about ramifications of treatment (e.g., how much time will this soldier need off? What duties can I assign him/her?) 	Command is [saying] "You need to be here training, you don't need to be sitting in the behavioral health clinic" And they think they're just shaming you know trying to get out of work.
Career concerns	11	9	Unsupportive leadership <ul style="list-style-type: none"> • Concerns about harm to career • Lack of advancement • Discharge • Differential treatment (e.g., different duties, held on location longer/shorter, not trusted by other unit members) • Interference with job duties • Can deal with it on my own • Don't want to depend on others • I've been through worse • Nothing is wrong with me • My peers aren't getting help 	I did not want them to try to kick me out of the military, if I was found to be too crazy or something. It was scaring me. So I just didn't do anything about [my symptoms].
Mental health beliefs	6	11		The biggest barrier was myself. Just the fact that I kept telling myself I could push through it by myself. I didn't need it. I didn't need anybody else. I had friends. I could deal with it alone.

(table continues)

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Table 2a (continued)

Themes	Senior		Codebook definition	Sample quotations
	Junior enlisted (n = 17)	enlisted/officer (n = 15)		
Lack of peer support	8	6	<ul style="list-style-type: none"> • Lack of social support for the soldier (that inhibits treatment seeking) • Peers' perceptions of soldier malingering when getting treatment 	<p>It's kind of like peer pressure, because they're sitting there telling you, 'you don't need to go [get help] or you are just making it up' . . . These are the [same buddies] that if you rolled outside the wire that you are supposed to trust your life with. These are the same people that, at least in this case, are turning right back around and saying you don't need help.</p> <p>I went down a destructive path first [before I sought help]. I did the drinking and partying and all that other stuff and . . . it didn't help.</p>
Symptom interference	6	6	<ul style="list-style-type: none"> • Symptoms interfere with compliance • Substance use to deal with the problem (that inhibits treatment seeking) • Symptoms interfere with getting treatment in the first place (e.g., isolation, mistrust) 	<p>I just thought I'd be less of a man [if I sought help].</p>
Self stigma	5	7	<p>Soldier's personal beliefs that mental health problems/treatment seeking reflects negatively on oneself, such as beliefs that he/she is</p> <ul style="list-style-type: none"> • Crazy • Weak • A slacker • Faking 	<p>I'm in combat arms so I am not supposed to [seek help]. There is no reason I should go see them, you know. It's my job, brush it off.</p>
Military beliefs	4	7	<ul style="list-style-type: none"> • Mental toughness/Hardened to stressors/emotions will get soldier through this • Mental toughness/Hardened to stressors/emotions -- treatment would harm this toughness • Everyone else has been through something as hard or worse; Don't acknowledge the problem because it's seen as normal • Need to subvert personal needs for the need of the unit or the mission 	<p>At first, I was very reluctant to actually get help just because I knew that if I told somebody that everybody would know . . . This is my personal life. I don't think everybody that I work with and everybody that I work around should know my business.</p>
Confidentiality concerns	2	8	<p>Concerns that peers, leaders, or others will find out about treatment seeking or mental health problems</p>	<p>(table continues)</p>

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Table 2a (continued)

Themes	Junior enlisted (n = 17)	Senior enlisted/officer (n = 15)	Codebook definition	Sample quotations
Lack of information	2	4	• When to get treatment (e.g., waiting until problems are severe) • Nature of treatment • Success rate of treatment • Who to call if need treatment • Where to go	I think that [soldiers] hear about [Army OneSource] but . . . like me I never understood, I did not know I could call at any point in time and at least talk to someone on the phone or get help outside of base.

liefs that being diagnosed with a mental illness is embarrassing and means that one is crazy or weak. Public stigma included concerns that leaders, unit members, friends, and family members would perceive or treat a soldier differently if they knew he or she sought mental health treatment. Public stigma was mentioned in the larger portion of focus groups with enlisted members, compared with focus groups with officers.

The most frequently noted treatment concerns were about medication, including side effects and how these side effects might interfere with job duties. In addition, soldiers described concerns that medications or other treatments would not work, and that medications are over-used or used inappropriately. Others described their concerns about treatment providers, including discomfort with providers and perceptions that providers were "burned out."

Regarding leadership problems, both leaders and junior-enlisted personnel noted that leaders often perceive soldiers who seek mental health treatment as "slackers" or malingerers. Soldiers also reported problems with trusting their leaders with them, including concerns that information would not be kept confidential. Furthermore, participants noted that leaders were sometimes unclear about what treatment entailed (e.g., how much time off would be required) or were busy with the high work demands and therefore unable to be supportive.

Other frequently reported barriers included practical constraints, confidentiality concerns, lack of peer support for treatment seeking, and lack of honesty on mental health assessments (e.g., underreporting symptoms to avoid visits with mental health professionals or speed processing after deployments). Practical constraints included limited availability of providers, inability to get timely appointments, and limited availability in soldiers' schedules. Confidentiality concerns were reported in a larger portion of focus groups with enlisted members, as compared with focus groups with officers.

Participants also described treatment-inhibiting beliefs that were promoted by military culture, such as the importance of retaining mental toughness and prioritizing the unit mission above one's own needs. Another aspect of military culture described by participants is that fellow soldiers are often perceived as having

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Table 2b
Facilitators of Mental Health Treatment Seeking Identified in Interviews With Treatment-Seeking Soldiers

Themes	Junior enlisted (n = 17)	Senior enlisted/officer (n = 15)	Codebook definition	Sample quotations
Encouraged by support person	16	13	<ul style="list-style-type: none"> • Family/spouse encouragement • Peer/battle buddy encouragement • Other friend encouragement • Wanting to be a better person for your family 	<p>[My wife] pointed out [that I was always angry] and just said, "You know, maybe you should go see somebody." I didn't want it to affect my marriage, so before that happened, I'd rather go see somebody.</p> <p>[I started coming to treatment because] there was stuff I'd seen on [my first] deployment and when I got back, my wife said I had changed, which I see it as well. I don't go to sleep until 2:00 or 3:00 in the morning and just lay in bed for 2 or 3 hours before I even get to sleep . . . [Also] I was just really angry, outbursts and breaking stuff and I know I am physically and mentally not there with my wife. I learned that people were doing counseling or had done counseling in the past as well as meds. That at least adds a little bit of reinforcement on what I was doing. That, "Hey okay, maybe it was the right thing to do."</p>
Symptoms interfering with life	16	13	<ul style="list-style-type: none"> • Problem became severe (e.g., suicidal ideation/attempts, DUIs) • Symptoms caused personal distress • Symptoms caused relationship impairment/isolation from others • Symptoms caused impairment at work • Symptoms creating risk for self or others • Don't want symptoms to get worse 	
Witnessed other treatment seekers' experiences	13	8	<ul style="list-style-type: none"> • Knowing someone else who had treatment and symptoms improved • Knowing someone else who had treatment and it had no negative effects • Generally knowing someone who had treatment 	
Supportive leadership	10	9	<ul style="list-style-type: none"> • Knowing someone with a similar problem • Observed the negative effects of others not getting treatment • Approval of treatment seeking • Scheduling flexibility or time off • Trustworthy leadership • Provided information on where/when to get treatment • Leader was a role model • Leaders identified problems • Leaders treated people the same after they got treatment 	<p>[During the deployment], my team leaders and squad leader were very supportive of going to get help. The platoon sergeant, as long as he knew where I was he didn't really have an issue with it. He didn't try and stop me from going. It's the same issue [in garrison]. You plan accordingly; they [also plan] accordingly and somehow make it fair and make it work.</p>

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Table 2b (continued)

Themes	Junior enlisted (n = 17)	Senior enlisted/officer (n = 15)	Codebook definition	Sample quotations
Referred by someone	10	8	<ul style="list-style-type: none"> Decided to be honest on screenings/referred through a screening Primary care doctor or other provider referred Referred by chaplain Ordered by a superior or otherwise compelled Referred by commander/leader A way to take care of yourself Won't harm your career Will help your career Like treating a physical health problem Treatment will work Need to put yourself before the military It's a personal responsibility It's a priority 	<p>My chain of command forced me to go to mental health. After seeing a therapist, [they said I] wasn't suicidal, wasn't homicidal, but [they] told me I needed to take stress-management, anger-management . . . and one-on-one therapy.</p> <p>I had to say, you know, "Hey, I'm going to this appointment, I understand the consequences if there is a mission and I don't make it. Yeah, Article 15, reduction in rank, I understand that. But that [doesn't] outweigh what I could do to myself that would not . . . hurt me but my family, you know, because my family is more important than my job." And then over the years, putting everybody first. I kind of was like, "You know what? It's about time I put myself first."</p> <p>Last year I was shot by a sniper in [country] and blown up about 3 or 4 times. So, that is why I am seeking treatment.</p> <p>When I was [a teenager], I was given a choice to either stay at the house or go to this [juvenile delinquency] group home . . . Our therapist was good at what she did. That was very helpful.</p> <p>I called Army OneSource because one of my NCOs was like, "Oh you can call them, they set you up with a counselor off-post." I called them up, and they're like, "Ok, we can get you therapy on-post." And I had an appointment that day.</p>
Treatment beliefs	9	10		
Life history	4	11	<ul style="list-style-type: none"> Experienced a lot of losses or other traumatic/stressful events 	
Past treatment experience	4	3	<ul style="list-style-type: none"> Experience with prior successful treatment Experience with prior treatment where side effects were not bad Caring mental health professional Knowing about the existence of behavioral health options Gained knowledge about different treatments (e.g., through the Internet, books) Knowing who the providers are 	
Information about treatment	3	3		

been through similar or worse life stressors, and therefore the soldier's own problems are perceived as insignificant, abnormal, or not deserving of mental health treatment. These beliefs were described in a larger portion of the officers' focus groups than in the enlisted focus groups. Another frequently reported treatment-inhibiting belief was the perception that a person should handle his or her problems alone. Participants also discussed how certain mental health symptoms could interfere with treatment seeking, such as isolating oneself from others or excessive substance use, which can lead to avoiding a problem or "self-medicating." Finally, participants noted lack of information on the nature of treatment, where to get it, who the providers were, or how long it would take.

Facilitators. As seen in Table 1b, the majority of focus groups identified leadership support and social support as facilitators of treatment seeking. Supportive leader behaviors included allowing time off and flexibility in assignments so that soldiers could attend appointments. Supportive leaders were also described as trustworthy and encouraging of seeking treatment. Soldiers noted that it was especially powerful when leaders sought treatment themselves, openly described these experiences to unit members, and continued to perform their jobs successfully. In terms of social support, participants described support from family, friends, and fellow unit members as critical facilitators to seeking treatment.

A prominent portion of focus-group members discussed practical facilitators and recognition/perceived severity of symptoms as facilitators to seeking treatment. Practical facilitators were described in a larger portion of the officers' focus groups, and included schedule availability and knowing where to get treatment. Regarding symptom severity, many soldiers described severe incidents that can prompt recognition of the need for treatment, including DUIs, physical assaults, and suicide attempts. Others identified general distress, not wanting symptoms to get worse, problems in relationships, and impairment in occupational functioning as potential triggers to seek treatment. In a few of the focus groups, participants described positive perceptions of mental health treatment seeking (e.g., perceiving it as helpful or efficacious) and familiarity with mental health providers as facilitators of treatment seeking.

Sample 2: Treatment Seekers

Barriers. Table 2a provides the most frequently identified barriers among the treatment seekers, as well as sample quotations relevant to these barriers. The most prevalent impediments were practical barriers, treatment concerns, public stigma, leadership problems, and career concerns. Discussions of practical barriers, leadership problems, and career concerns largely mirrored the themes from the focus groups. Discussions of treatment concerns differed somewhat from focus-group themes. The most frequently raised treatment concerns involved not feeling understood or cared for by providers. Some participants also discussed concerns that treatment would not work, discomfort with talking to someone about their problems, previously negative experiences with treatment, perceptions that they were only able to access military providers, and concerns that they would need to start again with a new provider if they or their providers were geographically reassigned. Identification of stigma also differed from focus-group discussions in that self-stigma concerns were raised less frequently among treatment seekers. In addition to the leadership concerns identified in the focus groups, many interview participants reported feeling generally unsupported by leadership in their treatment-seeking efforts. Similar to focus groups, other barriers identified by interview participants included negative mental health beliefs, lack of peer support for seeking treatment, symptom interference, military-related beliefs, confidentiality concerns, and lack of information. In relation to junior-enlisted members, a larger portion of senior-enlisted interviewees described the following barriers: self- and public stigma, mental health beliefs, military beliefs, and confidentiality concerns.

Facilitators. Table 2b provides the most frequently identified facilitators among treatment seekers, including encouragement by a support person, symptom severity/interference, referral by medical or military personnel, witnessing other treatment-seekers' experiences, supportive leadership, and positive perceptions of treatment seeking.

Interview participants most frequently identified encouragement from family members, particularly spouses, as representing a primary reason for seeking treatment. Many discussed

wanting to be a "better person" for their families. Several participants also described observing other successful treatment seekers' experiences as a factor that helped reduce stigma and served as an impetus for them to seek treatment themselves. Discussions of leadership support, as well as symptom severity, were similar to the themes that arose during focus groups. Many noted that it was not until symptoms reached a high level of severity that they recognized the need for treatment.

The most frequently reported positive perceptions of mental health treatment seeking were beliefs that addressing one's own mental health needs is a priority and a personal responsibility. Several participants stated that they overcame barriers to care by deciding to place their own needs before the needs of the military, or by deciding that the positive consequences of addressing their mental health needs outweighed the negative consequences of contending with public stigma. Other positive perceptions included beliefs that treatment would work and that treatment could actually help rather than harm one's career. Finally, additional facilitators included having information about treatment, past positive treatment experiences, and a history of life stressors that soldiers were unable to manage on their own. Compared with junior-enlisted participants, a larger portion of senior-enlisted participants described treatment beliefs and life history as treatment facilitators.

Discussion

Stigma was one of the most frequently identified barriers to care in both samples, consistent with earlier studies. Public stigma was mentioned most frequently; however it is important to note that self-stigma was also commonly reported, particularly among the general sample. Self-stigma has not been consistently measured in earlier studies of military samples, and these findings suggest that it should be included as a construct on future rating scales (Skopp et al., 2012) and considered as a possible target for intervention. The fact that self-stigma was mentioned less frequently among treatment seekers suggests that overcoming self-stigma may be an important part of the decision to seek treatment, although longitudinal studies are needed to establish this relationship.

As in previous research, career concerns, practical barriers, and treatment-inhibiting beliefs about mental illness and treatment all emerged as additional barriers to care. Regarding career concerns, our findings add to existing literature by identifying specific concerns about advancement, discharge, and burdening other unit members. These findings suggest that career concerns warrant measurement as a more complex and separate construct in future quantitative assessments of barriers to care. Similar to earlier studies, practical barriers were largely centered on scheduling problems. Financial concerns were not frequently discussed, perhaps due to the fact that we interviewed participants on post who likely had access to affordable care through the military.

Little is known about specific treatment concerns among active-duty soldiers, including concerns about medication side effects and lack of knowledge about treatment. These concerns were particularly prevalent among the general sample, which suggests that nonseekers of treatment lack accurate information about treatment. Other treatment concerns that were novel to this study included concerns that providers are "burned out," soldiers/officers do not feel understood by providers, they sense a lack of familiarity with providers, and are uncomfortable with discussing problems with providers. This discomfort is intensified when the Soldier or therapist is moved to a different location and the soldier needs to tell his or her story again to a different provider. Finally, we identified beliefs specific to the military climate that inhibit treatment seeking, such as the need to prioritize the mission over personal problems. Treatment-inhibiting beliefs that were consistent with previous findings included the beliefs that a soldier/officer must handle a problem on his or her own, that there was a lack of recognition of his or her problems, that treatment will not work, and that providers generally lacked trustworthiness.

This study identified several additional barriers to care that have not been previously described and may be unique to military culture. These included perceptions among leaders that soldiers with mental illness are malingering; leaders also have confidentiality concerns, and lack knowledge about mental health problems. Other novel barriers included symptom interference with treatment seeking, unsupportive

peers, general confidentiality concerns, and lack of honesty on mental health assessments.

Regarding treatment facilitators, positive leadership behavior, perceived symptom severity, and social network encouragement were common facilitators in both samples. Positive leadership behaviors have not been elaborated in the literature, and our findings suggest that these consist of allowing scheduling flexibility, engendering trust, and serving as role models for successful treatment seeking. Given the strong leadership structure of the military, leadership support may be particularly important in an active-duty setting (Britt et al., 2012). Findings related to perceived symptom severity were of concern, in that many soldiers did not acknowledge the need for treatment before a severe or life-threatening incident occurred. This suggests that more efforts need to be directed toward early recognition of symptoms as problematic and deserving of treatment. Encouragement by peers and family members was one of the most important facilitators identified by soldiers seeking treatment. Of particular interest was the importance of knowing other people who sought treatment and had to overcome barriers to mental health care. This is consistent with literature on stigma-reduction interventions, which suggests that contact with people who have mental illness is one of the most effective ways of reducing stigma (Corrigan & Penn, 1999). Consistent with the civilian literature (Vogel et al., 2005), perceived utility of treatment was also identified as a facilitator. This was mostly the case among treatment seekers, indicating that increasing anticipated utility of treatment among nonseekers of treatment could help alter behavior.

The factors that we identified in this study can be understood within the framework of the behavioral model of service use. Specifically, important predisposing factors included perceptions of mental health treatment, stigma, and social modeling from successful treatment seekers. Enabling factors included access to care, scheduling flexibility, leadership support, and social support from peers and family members. Need factors included perception of illness severity, life stressors, and symptoms that interfered with social and occupational functioning.

Given the qualitative nature of our data, it is difficult to draw conclusions about differences in barriers and facilitators across rank categories.

However, stigma and confidentiality concerns appeared to be more prevalent among enlisted members; within the interviews, this was particularly the case for senior-enlisted personnel. Senior enlisted and officers also appeared more likely to describe barriers within the military culture. These findings may reflect the fact that senior enlisted and officers were older and had often served more years in the military. Senior enlisted and officers also more frequently described facilitators such as schedule availability, knowing where to get treatment, positive perceptions of treatment, and life experiences that led to treatment. It is possible that senior enlisted and officers are more aware of services and why they are needed. Future research is needed to establish the stability and origins of these differences between service members of different ranks.

Although this study possessed several strengths, such as recruitment of an active-duty sample that included both treatment seekers and nonseekers of treatment from different ranks, certain limitations should be noted. First, the methodology employed with the general sample (i.e., focus groups) differed from the methodology employed with the treatment seekers (i.e., interviews). In addition, it is possible that the general sample included some participants who had previously sought or were currently seeking treatment. Therefore, our ability to draw comparisons between the two groups is limited. Furthermore, focus-group data might not accurately reflect the number of individual participants who would nominate a particular theme if interviewed individually. In addition, the interview participants were not representative of all rank structures and all participants were recruited from a single installation. Therefore, findings may not be reflective of the broader population of active-duty soldiers. To address these limitations, future studies should consider conducting interviews with both treatment seekers and treatment nonseekers from different installations. Finally, our use of qualitative methods limits our ability to quantify findings or to determine significant associations between barriers/facilitators and treatment-seeking behavior. Therefore, quantitative studies are needed to better establish these relationships.

Conclusion

Our findings have several implications for research and practice. Regarding research, our results suggest that several constructs should be added to existing quantitative assessments of barriers and facilitators of mental health treatment seeking. Barriers that could be added to existing measures include self-stigma, confidentiality concerns, specific treatment concerns, perceptions of malingering, military-related beliefs, leader and peer behaviors, and dishonesty on mental health assessments. Very little research has examined facilitators, and the current study provides guidance for developing a quantitative measure of treatment facilitators. In addition to previously identified facilitators such as symptom interference, measures could assess social network encouragement, positive perceptions of mental health treatment, and positive leader behaviors. Further study is also needed to determine the extent to which these barriers and facilitators generalize to other branches of the military, and how these factors differ by rank.

Regarding practice, our research identified several modifiable barriers to care, highlighting the potential utility of interventions that facilitate treatment seeking among active-duty soldiers. By connecting soldiers to needed mental health treatment, these interventions could increase early intervention, and thus reduce the negative consequences associated with untreated mental illness. Among service members, these negative consequences include disability, occupational impairment, suicide, health-risk behaviors, and disrupted family relationships (Tanielian & Jaycox, 2008). Our results suggest that such interventions could focus on providing accurate information on mental illness and treatment, challenging treatment-interfering beliefs, improving leader behaviors, and reducing practical barriers to care. For example, to challenge some of the treatment-interfering beliefs identified in this study, treatment seeking could be reframed as a form of courage that ultimately improves a soldier's performance in his or her unit. Accurate information could be provided on medication side effects, mental health symptoms that merit intervention, the nature of treatment, confidentiality policies, and any potential career consequences. It is possible that altering treatment-inhibiting perceptions would not only facilitate treatment-seeking behavior, but would

also improve early identification of symptoms and increase honesty on widely employed mental health screening instruments.

Our findings indicate that employing testimonials from successful treatment seekers would help to reduce stigma and address treatment concerns. Contact with clinicians prior to seeking treatment could, in addition, improve familiarity with providers, allow for the provision of pertinent information, and reduce stigma. The fact that friends and family play an important role in facilitating treatment also highlights the need to involve these individuals and provide them with information on mental illness and treatment. Furthermore, separate interventions may need to be developed for leaders that focus on recognizing symptoms, improving unit culture toward treatment seeking, and allowing flexibility for attending treatment sessions. Finally, several treatment adaptations have been developed that may help reduce practical barriers, such as brief treatments, treatments that are integrated into primary care settings, and telehealth interventions (Zinzow, Britt, McFadden, Burnette, & Gillispie, 2012).

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The Role of Different Stigma Perceptions in Treatment Seeking and Dropout Among Active Duty Military Personnel

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Objective: Many military personnel with mental health problems do not seek treatment from mental health professionals, and if they do seek treatment, they drop out of treatment before receiving the recommended number of sessions. The present study examined the role of 4 different stigma perceptions on these outcomes: perceived stigma to career, perceived stigma of differential treatment, self-stigma from seeking treatment, and stigmatizing perceptions of soldiers who seek treatment. **Method:** One thousand three hundred twenty-four active duty soldiers completed a self-report survey assessment that included measures of the 4 different stigma perceptions, indices of mental health symptoms, receipt of mental health treatment, and whether they had dropped out of treatment before it was completed. **Results:** Participants screening positive for a mental health problem reported higher scores on all 4 stigma perceptions. All 4 stigma perceptions were each associated with a reduced likelihood of treatment seeking when considered individually, but only stigmatizing beliefs about those who seek treatment were uniquely associated with treatment seeking. Perceived stigma for one's career and differential treatment from others, along with self-stigma from treatment seeking, were associated with an increased probability of dropping out of mental health treatment. Self-stigma from treatment seeking was the only unique predictor of dropout. **Conclusions and Implications for Practice:** Different stigma perceptions were associated with treatment seeking and dropout. Further longitudinal research is needed to examine how stigma perceptions influence these important outcomes. Practitioners need to be aware of how different stigma perceptions can influence treatment seeking and potentially target stigma perceptions during treatment to prevent dropout.

Keywords: stigma, military, treatment, dropout

Individuals exposed to traumatic events and other life stressors frequently experience mental health problems that result in significant functional impairment. Despite considerable mental health needs, researchers have noted there is a world-wide epidemic of individuals with psychiatric problems not seeking treatment (Kessler et al., 2005). In this study, we examined different types of stigma perceptions as correlates of treatment seeking and dropout among the particularly vulnerable population of active duty military personnel. The recent military conflicts in Iraq and Afghanistan have resulted in high rates of mental health problems among

military personnel, including posttraumatic stress disorder (PTSD), depression, and alcohol abuse (19%–44%; Hoge, Auchterlonie, & Milliken, 2006; Kim, Thomas, Wilk, Castro, & Hoge, 2010). Most studies found that less than half of the service members experiencing a mental health problem sought mental health services (Hoge et al., 2006; Kehle et al., 2010).

Researchers studying the determinants of treatment seeking among military personnel have highlighted many of the same factors as addressed in the broader civilian literature. These factors include the perceived stigma from others for seeking treatment (Britt, 2000; Britt et al., 2008; Hoge et al., 2004; Kim et al., 2011; Skopp et al., 2012; Vogt et al., 2014) and the self-stigma associated with feelings of low self-worth as a function of seeking treatment (Skopp et al., 2012). In addition to stigma perceptions, researchers have also identified practical barriers associated with lack of time for treatment because of a busy schedule (Britt et al., 2008; Hoge et al., 2004; Kim et al., 2011), negative attitudes toward mental health treatment (Kim et al., 2011; Vogt et al., 2014), and military personnel preferring to handle mental health problems on their own (Adler, Britt, Kim, Riviere, & Thomas, in press; Britt et al., 2011).

Much less research has examined the predictors of treatment dropout among military personnel, with most of the focus being on the higher rates of dropout among personnel from recent military operations in comparison to prior military conflicts (Erbes, Curry, & Leskela, 2009; Harpaz-Rotem & Rosenheck, 2011). In a recent study, Hoge et al. (2014) found that 24% of soldiers who reported

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receiving mental health treatment dropped out of treatment. These soldiers were asked to indicate the reasons they dropped out, and the most common reasons for dropping out included the belief that the problem could be handled oneself, treatment was interfering with work performance, and the soldier did not have enough time with the mental health professional.

Although early research in the area of treatment seeking highlighted the importance of stigma in a soldier's decision to seek treatment, more recent research has failed to support perceived stigma from others (public stigma) as a correlate of treatment seeking (Adler et al., in press; Kim et al., 2011; Pietrzak et al., 2009; Skopp et al., 2012). Instead, researchers have found greater support for negative attitudes toward mental health treatment and a preference for self-reliance as the main correlates of treatment seeking (Adler et al., in press; Britt et al., 2011; Kim et al., 2011; Pietrzak et al., 2009). Interestingly, similar findings have been reported in the broader civilian literature (Mojtabai et al., 2011). It is important to note that Skopp et al. (2012) did find that self-stigma was associated with treatment seeking among military personnel. However, no known studies have examined stigma toward others as a correlate of treatment seeking.

The purpose of this study was to more fully investigate the role of different stigma perceptions as correlates of treatment seeking and dropout among a large sample of active duty military personnel. Consistent with prior research, we assessed *perceived stigma from others* (reflected by a concern in being seen in a negative light by others) as well as the *self-stigma* (reflected by a concern in seeing oneself in a negative light) as correlates of treatment seeking and dropout. Recent research by Britt et al. (2014) found that items used in prior research to assess a single factor of perceived stigma from others could actually be separated into two separate factors, one reflecting a concern that getting treatment would harm the soldier's career (perceived stigma for career) and the other indicating a concern that soldiers would be viewed and treated differently by fellow soldiers (perceived stigma for treatment by others).

In addition to these traditional sources of stigma, we examined another form of stigma based on the results of two qualitative studies we conducted with military personnel (Zinzow et al., 2013). In focus groups with active duty soldiers of different ranks and interviews with soldiers who sought treatment while on active duty, soldiers expressed concerns about the reliability and operational readiness of soldiers seeking treatment as an impediment to treatment seeking. These types of concerns are not surprising given the organizational culture associated with high-risk work environments (Britt & McFadden, 2012).

We refer to these types of concerns as stigmatizing perceptions of those who seek treatment, and believe they represent a particular subset of the broader categories of stigmatizing beliefs and perceptions (see Brown, 2008). In addition, we argue these types of perceptions influence the decision to seek and drop out of mental health treatment in line with the modified labeling theory of Link (1987). According to this theory, all individuals develop conceptions of mental illness and perceptions of how people in general view those with mental illness. If individuals do not develop mental health problems, these perceptions do not affect self-perceptions. However, if individuals develop a mental health problem in need of treatment, these perceptions can create stigma that harms the self-esteem of individuals (Link et al., 2001) and may interfere with individuals getting needed treatment. In the context

of the military, if service members express concerns about the operational readiness and reliability of soldiers seeking mental health treatment, these concerns will become self-relevant when they are experiencing a mental health problem and are likely to interfere with treatment seeking and retention.

In this study, we assessed the relationships among the different stigma perceptions (perceived stigma for career, perceived stigma for treatment from others, self-stigma from treatment seeking, stigmatizing perceptions of others) and whether the perceptions were greater for those soldiers screening positive for mental health problems. In addition, we examined whether each stigma perception was associated with treatment seeking (for those with a mental health problem) and treatment dropout (for those who sought treatment) after controlling for relevant demographic variables and the functional impairment caused by mental health symptoms. In cases where multiple stigma perceptions were related to treatment seeking or dropout, we conducted a final logistic regression where the multiple stigma perceptions simultaneously predicted the relevant outcome.

Method

Participants and Procedures

The study sample was composed of 1,652 active duty soldiers who completed a survey assessment regarding their perceptions and utilization of mental health treatment. The sample was assessed at the second time period of a large longitudinal assessment of the determinants of treatment seeking among military personnel (see Britt et al., 2014, for a summary of the Time 1 assessment). Of the 1,652 soldiers, 1,324 (81%) consented to having their responses used for research purposes. The survey was administered as part of the predeployment processing of an Infantry Brigade on a military base. At the start of each day of data collection, soldiers were briefed on the assessment they were to complete and given a copy of the survey and informed consent document. Soldiers then completed the surveys throughout the day with the option to complete the survey while waiting at other stations, or they could complete the survey at the research team's designated station.

The majority of the sample was male (93%) and White (61%). Most were either 20–24 years old (43%) or 25–29 years old (27%). In terms of rank, the sample was 65% junior enlisted (E1–E4), 29% noncommissioned officers (E5–E9), and 7% officers. On average, soldiers had been in the military for 5.2 years ($SD = 5.7$), and 44% had deployed at least one month in the past 3 years.

Measures

Perceived stigma for career ($\alpha = .84$) was assessed with a three-item measure with items taken from Britt et al. (2008) and Kim et al. (2011). Soldiers were asked to rate the extent to which they agreed with each item on a 5-point scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Sample items were, "Getting mental health treatment would hurt my chances of getting promoted" and "Getting mental health treatment would lead to me getting discharged."

Perceived stigma of different treatment from others ($\alpha = .93$) was assessed with four items taken from Britt et al. (2008) and Kim et al. (2011) and were responded to on the same 5-point scale. Sample items include, "Members of my unit might have less

confidence in me if I received mental health treatment" and "I would be seen as weak if I received mental health treatment."

Self-stigma from seeking treatment ($\alpha = .65$) was assessed with four items (two positively worded and two negatively worded) from the 10-item self-stigma scale of Vogel, Wade, and Haake (2006). Soldiers rated the extent to which they agreed with each item regarding how they would perceive themselves if they sought treatment for a mental health problem. Ratings were on a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Sample items were, "It would make me feel inferior to ask a therapist for help" and "I would feel inadequate if I went to a therapist for psychological help." An abbreviated measure was used given the need for the overall assessment to be as brief as possible to avoid respondent fatigue.

Stigmatizing perceptions of soldiers who seek treatment ($\alpha = .86$) was assessed with six items that were generated to reflect stigmatizing beliefs about those who seek mental health treatment that were brought up in qualitative discussions with military personnel (Zinzow et al., 2013). Britt et al. (2014) found these items to form a factor separate from perceived stigma and other barriers to treatment seeking (including operational barriers, negative attitudes toward treatment, negative attitudes toward medication, and self-reliance). Soldiers rated the extent to which they agreed with each item on a 5-point scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Sample items were, "I would not trust a soldier to have my back if I knew he or she were receiving mental health treatment," "Soldiers who seek mental health treatment are just trying to get out of work," and "I would be concerned about the operational readiness of a unit member who was getting treatment for a mental health problem."

Treatment seeking was assessed in multiple ways to ensure that we captured any attempt on the part of soldiers to reach out to mental health professionals (broadly defined) for mental health services. First, participants were asked the following: "In the PAST 12 MONTHS, did you receive mental health services for a stress, emotional, alcohol, or family problem from any of the following professionals (Mark all that apply)." Nine different sources were listed, including several on-base behavioral health clinics, primary care providers, mental health providers at a civilian facility, spiritual advisors, or other sources. Response options were either *yes* or *no*. Second, participants were asked, "In the PAST 12 MONTHS have you received any of the following treatments? Check all that apply." Six possible treatments were listed, including individual therapy or counseling, medication, and marital or family therapy. Third, participants were asked how many visits for mental health services they had attended in the past 12 months. Response options were 0, 1-2, 3-7, 8-12, and more than 12. Finally, participants were identified as having sought treatment if they responded positively to a statement asking them if they had received treatment for a mental health problem or had indicated they had started treatment but dropped out. The different ways of assessing treatment seeking all highlight the receipt of mental health treatments and services.¹

Treatment dropout. For those participants who had reported receiving treatment in the past 12 months, they were also asked, "Did you start receiving mental health treatment in the past 12 months, but stopped or dropped out before completing the treatment?" with a response option of *yes* or *no*.

Self-reported current problem. All participants were asked to indicate whether they were currently experiencing a stress, emotional, alcohol, or family problem. Response options were *yes* or *no*. If soldiers reported *yes*, they were then asked to rate the severity on a scale from 1 (*not at all*) to 7 (*very*).

Posttraumatic stress disorder ($\alpha = .96$) symptoms were assessed using the 17-item Post-Traumatic Stress Disorder Checklist (Weathers, Litz, Herman, Huska, & Keane, 1993). Soldiers were asked to indicate how bothered they had been in the past month by any of listed symptoms on a 5-point scale ranging from 1 (*not at all*) to 5 (*extremely*). On the basis of criteria specified by the National Center for PTSD (2012), participants were considered to have PTSD if they met specified *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM-IV*; American Psychiatric Association, 1994) symptom criteria and had a severity score greater than 50.

Depression ($\alpha = .91$) symptoms were assessed using the nine-item Patient Health Questionnaire (PHQ) developed by Kroenke, Spitzer, and Williams (2001). Soldiers rated how often they had been bothered by the provided item in the past 2 weeks on a 4-point scale, ranging from 1 (*not at all*) to 4 (*nearly every day*). Soldiers were considered as having major depressive disorder in our study if they met three criteria: reported "little interest or pleasure in doing things" or "feeling down, depressed, or hopeless" at least more than half the days; reported on five or more items that they experienced the symptom at least more than half of the days; and reported at least somewhat difficult on an additional difficulty item (Kroenke et al., 2001).

Alcohol problem. A problem with excessive alcohol use was assessed using two items from the Two Item Conjoint Screen (TICS; Brown, Leonard, Saunders, & Papasouliotis, 2001). Soldiers were considered to have an alcohol problem if they responded *yes* to at least one of the two items.

Functional impairment ($\alpha = .92$) was assessed using three items adapted from Sheehan et al. (1996). Participants were asked in reference to the past 4 weeks, how much stress or emotional problems had interfered with occupational, social, and family functioning.

Results

Identifying Presence of a Mental Health Problem and Treatment Seeking

Following prior research (Britt et al., 2011; Kim et al., 2011), individuals were considered having a mental health problem in need of possible treatment if they identified the presence of a current problem or screened positive for a mental health problem. In the present study, soldiers were considered as having a problem if they reported a problem; screened positive for PTSD, depression, or alcohol problems; or had a mean score of 4.0 or greater on

¹ Given the interest in examining predictors of treatment seeking among those soldiers with an identified problem and examining predictors of dropout among those soldiers who sought treatment, we did not have the power to examine the predictors of treatment seeking and dropout from different sources. In general, the results were stronger when considering treatment from mental health professionals, but we are hesitant to draw firm conclusions given the relatively small number of soldiers who sought treatment from particular sources.

the measure of functional impairment. In terms of the incidence of mental health problems, 213 (17%) soldiers reported that they were currently experiencing a stress, emotional, alcohol, or family problem. Of those who reported experiencing a current problem, 46% rated the problem as moderately to very severe. One-hundred and 72 soldiers (13%) of the sample met screening criteria for PTSD, 82 (6%) met criteria for major depressive disorder, 150 (15%) met criteria for a problem with alcohol, and 33 (3%) scored 4.0 or greater on the measure of functional impairment of symptoms. In all, 394 (30%) of the sample was identified as having a mental health problem in need of possible treatment based on one or more of the above criteria. Given the relatively small percentage of soldiers screening positive for a specific problem, we limited the predictors of treatment seeking to soldiers identified as having a problem based on one or more criteria.

In terms of the number of soldiers seeking mental health treatment, of the 394 soldiers identified as having a problem, 157 (40%) reported seeking some form of mental health treatment in the past 12 months. The most common location for treatment seeking was a facility on the military base (52%). The most common treatment reported was individual therapy or counseling (26%), followed by medication for a mental health problem (14%).

Correlations and Group Differences on Stigma Perceptions

The correlations among the four types of stigma perceptions and mental health symptoms are provided in Table 1. The four different types of stigma were correlated with one another, with the perceptions of stigma to career and differential treatment showing the strongest relationship. The different stigma perceptions exhibited modest to nonsignificant correlations with the different mental health symptoms and functional impairment. Our new measure of stigmatizing perceptions of others who seek treatment was also moderately correlated with the other forms of stigma but demonstrated relatively weak relationships with mental health symptoms.

Those participants who were identified as having a mental health problem were compared to those who did not screen positive for a mental health problem on the four stigma perceptions. As seen in Figure 1, compared with soldiers without a mental health problem, those with a problem reported greater perceived stigma to career, $F(1, 1,315) = 38.30, p < .01, \eta^2 = .03$; perceived stigma from differential treatment by others, $F(1, 1,315) = 41.16, p <$

Stigma Perceptions

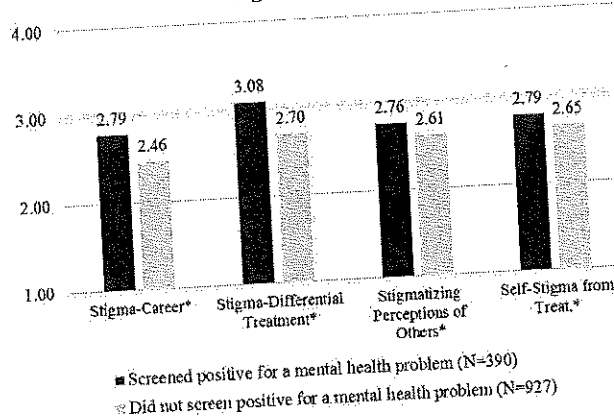


Figure 1. Mean differences in stigma perceptions between soldiers who screened positive and did not screen positive for a mental health problem.

.01, $\eta^2 = .03$; self-stigma from treatment, $F(1, 1,313) = 10.95, p < .01, \eta^2 = .01$; and stigmatizing perceptions of others who seek treatment, $F(1, 1,310) = 15.94, p < .01, \eta^2 = .01$. Overall, the effect sizes of being identified with a problem or not for the different stigma perceptions were small.

Stigma Perceptions and Treatment Seeking

To examine the four types of stigma perceptions as predictors of treatment seeking, a series of logistic regressions were conducted for the 394 soldiers screening positive for a mental health problem. To avoid overadjustment in the logistic regressions, we first conducted a model containing the demographic variable of rank and gender; the continuous measure of functional impairment; and whether soldiers screened positive or not for PTSD, depression, or alcohol problems as predictors of treatment seeking. The results of this model are presented in the first column of Table 2 and indicated that having an alcohol problem and functional impairment were unique predictors of an increased likelihood of treatment seeking.

In the second model, each individual stigma perception was entered individually as a predictor of treatment seeking, controlling for the demographic variables, mental health problems, and functional impairment included in Model 1. The results for these

Table 1
Means, Standard Deviations, and Correlations Among Study Variables

Variable	M	SD	1	2	3	4	5	6	7	8
1. Stigma-career	2.56	0.91	—							
2. Stigma-differential treatment	2.81	0.98	.70**	—						
3. Stigmatizing perceptions of others	2.65	0.65	.40**	.41**	—					
4. Self-stigma from treatment seeking	2.69	0.70	.45**	.49**	.44**	—				
5. Depression	3.49	5.11	.23**	.26**	.08**	.13**	—			
6. PTSD	28.44	14.50	.22**	.23**	.09**	.13**	.78**	—		
7. Alcohol problem	0.15	0.36	.12**	.10**	.11**	.05	.31**	.29**	—	
8. Functional impairment	1.41	0.80	.21**	.25**	.08**	.11**	.76**	.66**	.27**	—

Note. PTSD = posttraumatic stress disorder.

** $p < .01$.

Table 2
 Logistic Regression Analyses of Demographic Variables, Mental Health Problems, Stigma-Career, Stigma-Differential Treatment, Stigmatizing Perceptions of Others, and Self-Stigma as Predictors of Treatment Seeking

Variable	OR [95% CI]		
	Model 1 ^a	Model 2 ^b	Model 3 ^c
Rank ^d	0.84 [0.54, 1.31]	##	##
Gender ^e	0.41 [0.14, 1.23]	##	##
Functional impairment	1.83 [1.38, 2.42]**	##	##
Alcohol problem	0.48 [0.29, 0.80]**	##	##
Depression	1.15 [0.55, 2.38]	##	##
PTSD	0.74 [0.43, 1.27]	##	##
Stigma-career		0.73 [0.56, 0.95]*	0.87 [0.61, 1.23]
Stigma-differential treatment		0.77 [0.59, 0.99]*	0.97 [0.69, 1.36]
Stigmatizing perceptions of others		0.46 [0.31, 0.67]**	0.49 [0.32, 0.75]**
Self-stigma from treatment seeking		0.69 [0.50, 0.96]*	0.99 [0.67, 1.46]

Note. OR = odds ratio; CI = confidence interval; PTSD = posttraumatic stress disorder; ## = controlled for in each logistic regression.

^a Model conducted was logistic regression with rank, gender, functional impairment, alcohol problem, depression, and PTSD predicting treatment seeking. ^b ORs in Model 2 represent each variable entered into a logistic regression model individually, adjusted for the variables in Model 1. ^c ORs in Model 3 represent values when stigma-career, stigma-differential treatment, stigmatizing perceptions of others, and self-stigma were simultaneously entered into a logistic regression model, adjusted for the variables in Model 1. ^d Rank was coded junior enlisted = 1, noncommissioned officers = 2, officers = 3. ^e Gender was coded female = 1, male = 2.

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

logistic regressions are presented in the second column of Table 2 and reveal that when considered individually, all four stigma perceptions were each associated with a decreased likelihood of seeking treatment.

A final regression was conducted where all four stigma perceptions were entered together as predictors of treatment seeking while controlling for the demographic variables, mental health problems, and functional impairment. As seen in the third column of Table 2, stigmatizing perceptions of others who seek treatment remained a significant predictor of treatment seeking, whereas the other stigma perceptions did not.

Stigma Perceptions and Treatment Dropout

We adopted a similar approach to examine the four types of stigma perceptions as predictors of treatment dropout, limiting the analysis to 260 soldiers who reported seeking mental health treatment in the past 12 months. Of these 260 individuals, 57 (22%) indicated dropping out of treatment before completion. In examining the predictors of treatment dropout, an initial model was conducted examining rank, gender, and functional impairment as predictors. This model is summarized in the first column of Table 3. These results indicated that only functional impairment was a significant correlate of dropout, with greater impairment being associated with a higher probability of dropping out of treatment.

In the second model, each individual stigma perception was entered individually as a predictor of treatment dropout, controlling for the demographic variables and functional impairment included in Model 1. The results for these logistic regressions are presented in the second column of Table 3 and reveal that when considered individually, perceived stigma to career, perceived stigma of differential treatment by others, and self-

stigma from treatment seeking were each associated with a greater likelihood of dropping out of treatment, whereas stigmatizing perceptions of others who seek treatment was not. In the third and final model (shown in the third column of Table 3), the three significant stigma perceptions were included simultaneously as predictors of dropout after controlling for demographic variables and functional impairment. These results indicate that self-stigma from treatment seeking emerged as the only unique predictor of dropout.

Discussion

The results of our study indicate that different types of stigma perceptions are related to reports of treatment seeking and treatment dropout among active duty military personnel. The results indicated soldiers who screened positive for or reported a mental health problem scored higher on all four stigma perceptions. In addition, all four stigma perceptions were each individually associated with treatment seeking, but stigmatizing perceptions of others was the only unique correlate of soldiers receiving treatment. Finally, perceived stigma to career, perceived stigma of differential treatment, and self-stigma from treatment seeking were individually associated with treatment dropout, but only self-stigma from treatment seeking remained a unique correlate of treatment dropout. In the remainder of the discussion we address the implications of these findings, limitations of the study, and directions for future research.

The findings of our study contribute to a growing body of research on the relationship between stigma and seeking mental health treatment (Adler et al. in press; Kim et al., 2011; Pietrzak et al., 2009; Skopp et al., 2012). Many of these past studies have concluded that perceived stigma does not differentiate those who seek treatment from those who do not; however, we found

Table 3
 Logistic Regression Analyses of Demographic Variables, Stigma-Career, Stigma-Differential Treatment, Stigmatizing Perceptions of Others, and Self-Stigma as Predictors of Treatment Dropout

Variable	OR [95% CI]		
	Model 1 ^a	Model 2 ^b	Model 3 ^c
Rank ^d	1.42 [0.77, 2.63]	##	##
Gender ^e	1.70 [0.53, 5.52]	##	##
Functional impairment	1.50 [1.14, 1.97]**	##	##
Stigma-career		1.67 [1.14, 2.43]**	1.30 [0.80, 2.10]
Stigma-differential treatment		1.51 [1.06, 2.15]*	1.11 [0.70, 1.76]
Stigma perceptions of others		1.52 [0.92, 2.50]	
Self-stigma from treatment seeking		2.08 [1.31, 3.31]**	1.75 [1.04, 2.93]*

Note. OR = odds ratio; CI = confidence interval; ## = controlled for in each logistic regression.

^a Model conducted was logistic regression with rank, gender and functional impairment, alcohol problem, depression, and posttraumatic stress disorder predicting treatment seeking. ^b ORs in Model 2 represent each variable entered into a logistic regression model individually, adjusted for the variables in Model 1. ^c ORs in Model 3 represent values when stigma-career, stigma-differential treatment and self-stigma from treatment seeking were simultaneously entered into a logistic regression model, adjusted for the variables in Model 1. ^d Rank was coded Junior enlisted = 1, Non-Commissioned Officers = 2, Officers = 3. ^e Gender was coded female = 1, male = 2.

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

that all four types of stigma were related to treatment seeking. Of particular interest, our novel conceptualization of stigmatizing beliefs about others who seek treatment was the only stigma perception that was uniquely related to treatment seeking. These findings suggest that soldiers' internalized perceptions of others who seek treatment may be more impactful to decisions to seek help than how they think others may view them. These results are consistent with Link's (1987) modified labeling theory of stigma, suggesting that negative views of fellow soldiers who seek treatment are likely to become self-relevant when the soldier develops a mental health problem and may interfere with soldiers seeking treatment.

The results indicating self-stigma from treatment seeking is a correlate of treatment seeking are consistent with the findings by Skopp et al. (2012) using active duty military personnel from a different base. Our findings extend that self-stigma from treatment seeking is uniquely related to treatment dropout. These findings highlight that stigma perceptions may be important to treatment retention and are especially important given the relative lack of research on treatment dropout in comparison to treatment seeking. In addition, our findings demonstrate the potential importance of considering whether stigma is internalized and the relative impact on treatment outcomes. In our study, stigmatizing perceptions of those who get treatment and self-stigma from treatment seeking emerged as unique predictors of treatment seeking and treatment dropout. Thus, these conceptualizations may be more important to consider than prior conceptualizations of perceived stigma because of the internalized nature of the stigma, either in personal beliefs about those who seek treatment or beliefs about oneself.

Limitations and Directions for Future Research

One limitation of our study was cross-sectional design, which limited our ability to draw causal inferences between stigma, treatment seeking, and dropout. Longitudinal studies are needed

to examine these relationships. In addition, all of the variables in this research were assessed through the same method of self-report. Although perceptions of stigma are most appropriately addressed as self-report, treatment seeking and dropout could be assessed through an alternative source, such as medical records. However, our self-report measures of treatment seeking and dropout were assessed as objective reports of past behavior, and we have little reason to believe military personnel would distort their endorsement of these behaviors on an anonymous survey.

A second limitation has to do with the assessment of self-stigma from treatment seeking. In this study we used an abbreviated version of Vogel et al.'s (2006) measure of self-stigma, rather than the full 10-item measure developed by Skopp et al. (2012). The use of the full measure in future research is recommended, as the higher reliability and coverage of the content domain of self-stigma from treatment seeking in the 10-item measure should make it a better predictor of treatment behaviors. A final limitation is being unable to examine the different stigma perceptions as predictors of treatment seeking and dropout from specific sources (e.g., mental health professionals, medical doctors, chaplains), given the small sizes of treatment seekers. Future research with larger samples of treatment seekers should be able to address the different predictors of treatment seeking and dropout from different providers.

In conclusion, the results of our study suggest that stigmatizing perceptions of soldiers who seek mental health treatment was associated with a lower likelihood of treatment seeking, whereas self-stigma from treatment seeking was associated with a greater likelihood of treatment dropout. Further longitudinal research is needed to examine how stigma perceptions influence these important outcomes. In addition, interventions focusing on unit support for treatment seeking need to be developed and evaluated. Our findings suggest that stigma toward others should be a target for these interventions. For example, inter-

ventions could include contact with individuals who have mental illness, as this technique represents the most successful means of reducing stigma (Corrigan & Penn, 1999). Once in treatment, practitioners could potentially target self-stigma perceptions to prevent dropout. Cognitive-behavioral strategies may be particularly effective in reducing these perceptions. Strategies include challenging maladaptive beliefs, as well as encouraging individuals to engage in avoided community and social activities (Holmes & River, 1998). Therefore, a combined effort to address stigma through treatment-facilitating and mental health interventions may be most useful in decreasing the gap between mental health needs and treatment-seeking behavior.

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Barriers and Facilitators of Mental Health Treatment-Seeking in U.S. Active Duty Soldiers With Sexual Assault Histories

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Despite significant mental health needs among sexual assault (SA) victims in the military, little is known about treatment-seeking patterns or factors associated with service use. This study examined service use behavior, barriers, and facilitators of mental health treatment-seeking in an active duty sample of 927 U.S. Army soldiers with mental health problems. SA victims ($n = 113$) did not differ from non-victims on barriers or facilitators after adjusting for demographic and mental health variables, with stigma rated as the largest barrier. Most SA victims (87.6%) had sought informal support and 59.3% had sought formal treatment. One third of treatment-seekers had dropped out of treatment. Multivariate logistic regression analyses identified several correlates of treatment-seeking among SA victims: Black race ($OR = 7.57$), SA during the military ($OR = 4.34$), positive treatment beliefs ($OR = 2.22$), social support for treatment ($OR = 2.14$), self-reliance ($OR = 0.47$), and stigma towards treatment seekers ($OR = 0.43$). Mental health symptoms were not associated with treatment seeking. Findings suggested that treatment-facilitating interventions should focus on improving recognition of mental health symptoms, altering perceptions related to self-reliance, and reducing stigma. Interventions should also enlist support for treatment-seeking from unit members, leaders, and significant others.

Lifetime prevalence of sexual assault (SA) among female service members and veterans ranges from 38.1% to 44.0% (Lang et al., 2003; Zinzow, Grubaugh, Frueh, & Magruder, 2008). In addition, a large number of women experience these incidents during the course of military service (Kang, Dalager, Mahan, & Ishii, 2005; Kimerling et al., 2010). Furthermore, approximately 1.0% of male Veterans Affairs (VA) patients report sexual trauma that occurred during military service. Due to the larger proportion of men than women in the military, these figures suggest that the actual number of female and male military sexual assault victims may be similar (Kimerling, Gima, Smith, Street, & Frayne, 2007). Sexual trauma among

military personnel of both genders is thus a significant problem (Kimerling et al., 2010).

SA has been associated with a wide range of mental health problems, including posttraumatic stress disorder (PTSD), depression, and substance use disorders (Kilpatrick, Acierno, Resnick, Saunders, & Best, 1997; Tjaden & Thoennes, 2006). Despite significant treatment needs, only a minority (38% to 39%) of SA victims seek mental health treatment for these problems (Campbell, Wasco, Ahrens, Seff, & Barnes, 2001; Zinzow et al., 2008). Research findings have suggested that SA victims are more likely to seek out informal social support (e.g., friends, family) as opposed to formal assistance (Ullman & Filipas, 2001). Data are lacking, however, regarding the type or amount of either informal or formal assistance that is received. In the context of clinical trials, treatment dropout from trauma-focused interventions ranges from 18.9% to 26.9% (Hembree et al., 2003), but no studies have described typical patterns of treatment retention or dropout for SA victims receiving services in naturalistic settings.

It is important to identify barriers and facilitators of mental health service use among SA victims to facilitate treatment seeking. Lack of access to care or medical insurance have been noted as barriers to care in community samples of SA victims (Sherbourne, Dwight-Johnson, & Klap, 2001; Ullman & Brecklin, 2002). Consistent with this finding, SA victims who belong to minority groups or have less education are less likely to seek mental health services (Campbell et al., 2001; Sherbourne et al., 2001; Ullman & Brecklin, 2002). Regarding facilitators, trauma

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history, symptom severity, and social support have been positively associated with mental health service-seeking in SA victims (Amstadter et al., 2010; Ullman & Brecklin, 2002; Zinzow et al., 2008). Only one qualitative study has identified barriers specific to military SA victims, including stigma, discomfort talking about problems, and lack of knowledge about services (Turchik, Rafie, Rosen, & Kimerling, 2014). Additional studies are needed to examine the impact of other important factors, such as knowledge and attitudes towards mental health treatment (Ullman, 2007).

Although research on SA victims in the military is lacking, several studies have identified barriers to mental health treatment-seeking in general military samples. These include (a) stigma, (b) practical barriers, (c) negative perceptions of mental health treatment, and (d) beliefs that one can handle the problem oneself (self-reliance; Britt et al., 2008, 2011; Hoge et al., 2004; Kim, Britt, Klocko, Riviere, & Adler, 2011; Zinzow et al., 2013). Research on facilitators is similarly limited, but studies have found that positive leader behaviors, combat exposure, and mental health problems have been associated with increased likelihood of using mental health services (Britt, Wright, & Moore, 2012; Hoge, Auchterlonie, & Miliken, 2006).

Given the substantial prevalence and significant mental health concerns associated with SA among female service members, it is important to facilitate mental health service seeking in this population. Therefore, it is essential to investigate the nature of service use, as well as barriers and facilitators of care for SA victims with current mental health needs. Furthermore, research suggests that SA victims are subject to unique experiences, such as fear of blame and reprisal, which may influence their treatment-seeking needs and behaviors (Kimerling et al., 2007; Ullman, 2007). As a result, it is possible that the factors associated with treatment seeking differ between service members who have and have not experienced SA. An enhanced understanding of these factors is important in developing targeted interventions to increase service-seeking in trauma-exposed military personnel with mental health problems.

The purposes of this study were to examine the nature of service use in active-duty soldiers with SA history and current mental health needs. Specifically, we examined the prevalence of service use, the type and amount of services received, and treatment dropout. We also examined the relationships between demographic variables, combat exposure, mental health problems, and service use. Finally, we employed a comprehensive assessment of barriers and facilitators to determine which factors were most commonly reported, whether these factors differed from soldiers without SA history, and which factors were associated with treatment-seeking behavior.

Method

Participants and Procedure

A survey was administered to active duty U.S. Army soldiers from the infantry division of one brigade. The soldiers

completed self-report surveys in garrison 9 months following their brigade's deployment in August 2012. Participants completed the surveys in a classroom facility, with a maximum of 150 soldiers per session. Informed consent was obtained from the soldiers, and an ombudsman was present at each session to answer questions regarding their participation. An item was included on the survey for soldiers to indicate whether they approved use of their responses for research purposes. There were 1,911 soldiers who completed the survey, of which 1,725 participants (92%) provided consent. The measures used in the present study were drawn from a larger assessment described in Britt et al. (2015).

The final sample included 927 soldiers who reported a current mental health problem or sought treatment for a mental health problem in the past year. A current mental health problem was defined as screening positive for probable PTSD, depression, or alcohol problems. Of these soldiers, 113 (12.1%) experienced SA (defined below). Within the SA group, 64.6% screened positive for PTSD, 26.5% for depression, and 27.4% for alcohol problems. Comparisons between SA and non-SA groups on demographics, combat exposure, and mental health history indicated that the SA group was less likely than the non-SA group to have deployed, and more likely than the non-SA group to be female and to report PTSD symptoms, depression symptoms, and functional impairment (Table 1).

Measures

Eight items assessed demographic variables. Participants indicated whether their current ages fell within the following ranges: 18–19, 20–24, 25–29, 30–39, or 40 or older. Gender was assessed as male (coded as 0) or female (coded as 1). Response options for race/ethnicity included: Caucasian/White, African American, Asian/Pacific Islander, Hispanic, and Other. Asian/Pacific Islander was grouped in the Other category for purposes of the analyses. Highest level of civilian education included eight response options. A variable representing college degree was created (0 = some high school, GED, high school diploma, or some college; 1 = associate's degree, bachelor's degree, master's degree, or doctorate degree). Participants indicated how many times they had deployed in their career to Iraq, Afghanistan, Kuwait or Qatar, or Other (response options included *never*, *one time*, *two times*, or *three or more times*). A dichotomous variable was created to represent whether the participant had indicated deploying at least one time to any location (1) or never to any of them (0). Participants chose from six response options for rank (E1–E4, E5–E6, E7–E9, O1–O3, O4–O9, W01–W05). A dichotomous variable represented enlisted rank (coded 1 for E1–E9; coded 0 for O1–O9 and W01–W05). Participants were also asked how many years they had been in the military ($M = 5.58$, $SD = 5.72$).

Two items assessed lifetime SA. Participants were asked "For each event, indicate whether it happened to you personally at any point in your entire life." Response options were yes or no. One item from the Life Events Checklist (Gray, Litz, Hsu,

Table 1
Comparisons Between Characteristics of Soldiers With and Without Sexual Assault History

Variable	Sexual assault (n = 113)		No sexual assault (n = 814)		χ^2 or <i>t</i>
	n or M	% or SD	n or M	% or SD	
Female gender	45	39.8	54	6.6	104.04*
Race					6.27
White	60	52.7	522	64.2	
Black	28	24.5	133	16.4	
Hispanic	13	11.8	84	10.3	
Other race	12	10.9	74	9.1	0.80
Age (years)					
18–24	56	49.5	398	48.9	
25–39	51	45.0	385	47.3	
≥ 40	6	5.4	30	3.7	0.19
Enlisted rank	110	97.3	786	96.6	8.44*
Deployed	67	59.4	597	73.3	0.02
College degree	17	15.3	129	15.9	-1.34
Combat exposure	0.60	0.76	0.72	0.86	4.29*
Depression symptoms	10.19	7.25	7.67	6.42	5.03*
PTSD symptoms	58.82	14.68	52.17	14.54	-1.41
Alcohol problems	0.44	0.77	0.57	0.75	2.74*
Functional impairment	6.80	3.49	6.04	3.31	

*Significant after Bonferroni correction ($p < .007$).

& Lombardo, 2004) assessed forcible assault: "Sexual assault (rape, attempted rape, made to perform any type of sexual act through force or threat of harm)," and one item adapted from the National Women's Study (Kilpatrick et al., 1997) assessed incapacitated assault: "Unwanted sexual contact while you were passed out from drug or alcohol use, or too drunk or high to know what you were doing or control your behavior." Approximately 81.4% of SA victims reported forcible assault history and 54.0% of participants reported incapacitated assault history. Participants were also asked "How old were you when you experienced the most recent event?" and this was subtracted from current age range to determine that the average range of time since the most recent assault was 7–11 years ago. If the upper end of the age range for most recent assault was less than the number of years the participant had served in the military, participants were considered to have experienced a sexual assault during their tenure in the military (31.9%).

Exposure to traumatic events during combat was assessed using the mean of 20 items from the Combat Experiences Scale (Killgore et al., 2008), a measure that has been used in similar samples (e.g., Hoge et al., 2004; $\alpha = .91$). Participants were asked how many times any of the experiences occurred during any of their deployments, with response options ranging from 0 = never to 4 = ten or more times.

The PTSD Checklist (PCL; Weathers, Litz, Herman, Huska, & Keane, 1993) assessed 17 symptoms of PTSD according to the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., text rev.; *DSM-IV-TR*; American Psychiatric

Association, 2000) in reference to the past month. The PCL has demonstrated good reliability and validity (Blanchard, Jones-Alexander, Buckley, & Forneris, 1996). Response options ranged from 1 = not at all to 5 = extremely. Participants were categorized as positive for probable PTSD if they endorsed a pattern of symptom cluster items at moderately or above in correspondence with *DSM-IV* criteria (one or more items for Criterion B, three or more items for Criterion C, and two or more items for Criterion D) and had a total score on all items that was greater than 50. A total score was also used as a continuous variable ($\alpha = .95$).

The 9-item Patient Health Questionnaire (PHQ; Kroenke, Spitzer, & Williams, 2001) assessed whether participants were bothered by nine depression symptoms over the past 2 weeks, and a 10th item assessed whether these problems made it difficult to work, take care of things at home, or get along with other people. The instrument has been validated in military samples (Hoge et al., 2004). Response options ranged from 1 = not at all to 4 = nearly every day. Those who endorsed functional impairment and five or more symptoms during the past 2 weeks were categorized as screening positive for depression (Kroenke et al., 2001). A total score was also created ($\alpha = .90$).

The Two Item Conjoint Screen (TICS) assessed excessive alcohol use during the past four weeks, with yes/no response options (Brown, Leonard, Saunders, & Papasouliotis, 2001). The TICS has shown good sensitivity and specificity for alcohol use disorders in military samples (Santiago et al., 2010). Participants were classified as positive for alcohol problems

if they endorsed at least one of the two items. A continuous variable represented the sum of two items ($\alpha = .58$).

A modified version of the Sheehan Disability Scale (Sheehan, 1983) was used to assess functional impairment. It included three items that assessed the extent to which stress or emotional problems had disrupted occupational, social, or family functioning during the past four weeks. Response options ranged from 1 = *not at all* to 5 = *extremely*, and were summed to derive a total score ($\alpha = .88$).

A 47-item measure assessed barriers and facilitators of mental health treatment-seeking (Britt et al., 2008; Kim et al., 2011; Zinzow et al., 2013). Britt et al. (2015) found support for a 9-factor structure, which included differential treatment stigma (e.g., Getting mental health treatment would be embarrassing); career stigma (e.g., Getting mental health treatment would hurt my chances of getting promoted); stigmatizing perceptions of soldiers who seek treatment (e.g., I would have less confidence in a unit member who had received mental health treatment); self-reliance (e.g., I prefer to handle problems myself as opposed to seek mental health treatment); practical barriers (e.g., I do not know where to go to get mental health treatment); negative beliefs about treatment (e.g., The idea of talking about my problems during therapy makes me uncomfortable); medication concerns (e.g., Medications are not a good way to treat a mental health problem); positive beliefs about mental health treatment (e.g., Mental health treatments work); and social support for treatment seeking (e.g., Friends and family would encourage me to go get mental health treatment if I needed it). Response options ranged from 1 = *strongly disagree* to 5 = *strongly agree*. Cronbach's α for the factors ranged from .67 to .92.

Those who reported treatment-seeking in the past 12 months completed 11 items that assessed the extent to which certain facilitators influenced their decisions to seek treatment. These items were developed via content analysis of interview data from active duty soldiers who were seeking mental health treatment (Zinzow et al., 2013). Participants were asked to "Please indicate the extent to which each of these influenced you to seek treatment." Response options ranged from 0 = *not at all* to 4 = *very much* ($\alpha = .90$).

Participants were asked "In the past 12 months, how many visits for mental health services did you attend?" and "Did you start receiving mental health treatment in the past 12 months, but stopped or dropped out before completing the treatment?" They were also asked whether they had received services at specific behavioral health and medical facilities, and whether they had received specific types of mental health services (e.g., individual therapy, group therapy). In addition, participants were asked whether they were currently receiving treatment for a stress, emotional, alcohol or family problem. Participants were considered as treatment seeking if they had attended at least one mental health visit, received services at any of the assessed locations, received any of the assessed services, received services and dropped out, or were currently receiving treatment. Informal support-seeking was assessed via items that asked whether participants had communicated with various sources of infor-

mal support (e.g., friend or family member) about a stress, emotional, alcohol, or family problem in the past 12 months. Participants' use of online, hotline, and self-help resources was also assessed.

Data Analysis

Pearson's χ^2 and analyses of variance examined demographic and symptom differences between SA and non-SA groups with mental health problems. Multivariate logistic regression and analyses of covariance (ANCOVAs) included significant variables from prior group comparisons in the model, and compared SA and non-SA groups on service use, as well as barriers and facilitators of treatment-seeking. Bonferroni corrections were applied to control for familywise error. Logistic regression analyses were then employed to examine correlates of treatment seeking in SA victims. To minimize familywise error, groups of variables were entered in five multivariate models representing theoretically defined categories. Significant variables were entered into a final model. SPSS version 22 software was used to conduct these analyses.

Results

Approximately 59.3% ($n = 67$) of SA victims and 47.9% of non-SA participants ($n = 390$) with a mental health problem reported seeking treatment during the past 12 months. There were no significant differences between the groups after adjusting for demographic and mental health variables, odds ratio = 1.53, 95% confidence interval [0.93, 2.51], $p = .097$. The modal number of mental health visits for the SA group was 3–7 (35.8%), followed by 1–2 visits (22.6%), 8–12 visits (22.6%), and 12 or more visits (18.8%). The SA group did not significantly differ from the non-SA group on number of visits; $\chi^2(1, N = 457) = 6.86, p = .076$. Over one third of SA participants reported that they stopped or dropped out of treatment before completing it (Table 2).

Most SA treatment seekers (80.0%) had received individual therapy and 40.0% had been prescribed medication. Treatment-seeking participants were most likely to receive treatment at the military behavioral health clinic followed by other military medical clinics or facilities. SA participants did not significantly differ from non-SA participants after adjusting for demographic and mental health symptoms and correcting for familywise error ($p < .005$; Table 2).

The majority of participants (87.6% of SA and 77.7% of non-SA, including nontreatment seekers) had sought informal support for a stress, emotional, alcohol, or family problem in the past 12 months. Among treatment seekers, most had communicated with a friend or family member, and approximately half had communicated with a unit member. Regarding self-help, participants were most likely to consult online resources. SA and non-SA treatment seekers did not significantly differ on informal help seeking (Table 2).

Sexual Assault: Treatment Barriers and Facilitators

Table 2
Percentage of Mental Health Service Use and Help-Seeking for Treatment Seekers Only by Sexual Assault Status

Variable	Sexual assault (n = 67)	No sexual assault (n = 390)	OR	95% CI
		25.0	1.89	[0.88, 4.03]
Dropped out	32.7			
Type of service		58.5	2.09	[0.99, 4.43]
Individual therapy/counseling	80.0	29.6	1.51	[0.73, 3.12]
Medication	40.0	26.0	1.74	[0.85, 3.58]
Assessment session	38.5	28.4	1.26	[0.62, 2.57]
Marital/family	28.8	15.9	1.26	[0.53, 3.01]
Group	18.5	14.8	1.18	[0.50, 2.82]
Alcohol/substance use	15.4	7.3	1.19	[0.35, 4.08]
Telehealth	7.7	3.9	1.97	[0.52, 7.45]
Alternative or holistic	7.8	4.4	1.02	[0.20, 5.12]
Inpatient	4.6	2.9	1.61	[0.31, 8.40]
Internet-based therapy	4.6			
Location		44.6	2.05*	[1.05, 3.99]
Military BH clinic	63.1	42.3	1.67	[0.88, 3.18]
Other military clinic	56.7	18.4	2.50*	[1.22, 5.12]
Chaplain or spiritual advisor	32.3	13.6	1.70	[0.78, 3.69]
Primary care	23.9	14.9	1.42	[0.62, 3.35]
MH prof at civilian facility	20.0			
Informal help-seeking		73.4	1.14	[0.53, 2.44]
Romantic partner	75.4	70.9	1.30	[0.58, 2.88]
Friend/family member	81.3	54.2	1.40	[0.72, 2.71]
Unit member	63.1	37.5	0.98	[0.49, 1.96]
Unit leader	35.9	19.7	1.60	[0.78, 3.25]
Spiritual leader/chaplain	33.3	24.5	1.07	[0.51, 2.21]
Online resources	30.3	4.9	1.29	[0.36, 4.69]
Hotline	9.1	12.7	1.09	[0.45, 2.66]
Self-help books	18.5			

Note. Analyses conducted with gender, deployment, PTSD symptoms, depression symptoms, and functional impairment in the model. MH = mental health; BH = behavioral health.
*p < .05.

The most highly rated barriers were differential treatment stigma, negative beliefs about medications, and practical barriers. Facilitators were rated more highly than barriers (Table 3). Within treatment seekers, the most highly influential facilitators related to knowing where to get treatment, perceptions that treatment is helpful, functional impairment, and social support (Table 4). ANCOVA analyses indicated that the SA group did not differ from the non-SA group on barriers and facilitators, after adjusting for covariates and applying a Bonferroni correction ($p < .005$; Tables 3 and 4).

Table 5 describes the logistic regressions from five models examining the factors associated with treatment seeking. These multivariate models indicated that Black race, Hispanic ethnicity, sexual assault during military service, positive beliefs about treatment, and social support for treatment were positively associated with treatment seeking. Stigmatizing perceptions of treatment seekers and self-reliance were negatively associated

with treatment seeking. In the final multivariate model, Black race and social support for treatment were positively associated with treatment-seeking, and self-reliance was negatively associated with treatment-seeking (final model $R^2 = .48$, $p < .001$; Table 5).

Discussion

Our findings indicated that approximately one third of SA victims with mental health problems did not receive treatment during the past year. These data are consistent with prior findings regarding discrepancies between mental health needs and treatment seeking in SA victims (Campbell et al., 2001; Zinzow et al., 2008). Little is known about treatment-seeking patterns in this population, and our data highlighted additional concerns regarding treatment completion. We found that even when

Table 3
Comparison of Barriers and Facilitators of Treatment-Seeking by Sexual Assault Status

Variable	Sexual assault (n = 91)		No sexual assault (n = 644)		d
	M	SD	M	SD	
Barriers					
Differential treatment stigma	3.25	1.02	3.21	1.04	-0.05
Negative medication beliefs	3.15	0.77	3.23	0.68	-0.23
Practical barriers	3.24	0.95	3.25	0.87	-0.26*
Self-reliance	2.98	0.86	3.09	0.78	-0.05
Negative treatment beliefs	3.00	0.68	3.03	0.66	-0.14
Career concerns	2.69	0.91	2.83	0.94	-0.22
Stigma of seeking treatment	2.59	0.63	2.64	0.69	-0.10
Facilitators					
Positive beliefs re: treatment	3.63	0.73	3.54	0.62	0.20
Social support for treatment	3.54	0.92	3.60	0.78	0.04

Note. Analyses of covariance included gender, deployment, posttraumatic stress analysis symptoms, depression symptoms, and functional impairment as covariates. Range of all variables = 1-5.

* $p < .05$.

participants did attend treatment, over one third dropped out, and the majority did not attend more than seven sessions of treatment. Therefore, it is important to understand barriers and facilitators of treatment-seeking behavior to ensure that service use matches treatment needs.

The most highly rated barriers in our sample included differential treatment stigma, negative beliefs about medication, and practical barriers. None of these barriers, however, were significantly associated with actual treatment-seeking behavior. In general, the facilitators were rated more highly than the barriers and were significantly associated with treatment seeking. Therefore, it is possible that facilitators such as positive beliefs about treatment and support from others allowed

participants to overcome practical barriers and differential treatment stigma. Soldiers with SA history did not significantly differ from soldiers without SA history on ratings of barriers and facilitators, suggesting that treatment-facilitating interventions could address comparable factors for each of these groups.

Our findings add to prior literature that has identified similar barriers in military samples (e.g., Britt et al., 2011; Hoge et al., 2004) by demonstrating a relationship between these factors and treatment-seeking behavior in SA victims. In particular, self-reliance was a unique correlate of treatment seeking. Self-reliance may be an especially prominent barrier in military samples, due to the fact that military culture encourages retaining mental toughness and prioritizing the unit mission over

Table 4
Comparisons Between Treatment-Seeking Soldiers With and Without Sexual Assault History on Facilitators of Treatment Seeking

Variable	Sexual assault (n = 41)		No sexual assault (n = 235)		d
	M	SD	M	SD	
Knew where to get treatment	2.95	1.24	2.62	1.22	0.31
Perceived treatment as helpful	2.90	1.20	2.59	1.21	0.23
Treatment is taking care of myself	2.88	1.27	2.61	1.26	0.24
Spouse/family encouraged treatment	2.80	1.36	2.51	1.26	0.31
Problems interfering with life	2.76	1.41	2.60	1.26	0.19
Leaders allowed time off for treatment	2.02	1.29	1.98	1.28	0.09
Leaders support seeking treatment	1.95	1.32	1.70	1.30	0.30
Schedule is flexible for treatment	1.88	1.43	1.91	1.33	0.03
Soldier/friend encouraged treatment	1.83	1.39	1.86	1.34	-0.07
Leaders showed where obtain treatment	1.49	1.31	1.36	1.32	0.20
Command-referred for treatment	0.63	1.20	0.73	1.26	-0.03

Note. Analyses of covariance included gender, deployment, posttraumatic stress analysis symptoms, depression symptoms, and functional impairment as covariates. Range of all variables = 0-4.

Table 5
Associations Using Logistic Regression for Treatment-Seeking Among Soldiers With Sexual Assault Histories

Variable	Multivariate blocks		Final model (N = 98)	
	OR	95% CI	OR	95% CI
Model 1: Demographics: $R^2 = .36^*$ (n = 73)				
Age (years)				
18-24	1.92	[0.47, 7.84]		
25-39	0.18	[0.00, 11.42]		
≥ 40	0.25	[0.06, 1.08]		
Female				
Race/ethnicity				
White	7.57*	[1.49, 38.35]	4.74*	[1.10, 20.41]
Black	11.83*	[1.40, 100.05]	4.36	[0.64, 29.74]
Hispanic	0.66	[0.03, 12.88]	1.13	[0.22, 5.78]
Other	0.75	[0.12, 4.61]		
College degree	0.27	[0.01, 10.31]		
Enlisted	1.25	[0.28, 5.52]		
Deployed	0.40	[0.14, 1.16]		
Combat exposure mean	4.34*	[1.17, 16.06]	2.64	[0.81, 8.56]
Sexual assault during military				
Model 2: Mental Health: $R^2 = .08$ (n = 81)				
Depression total	0.95	[0.87, 1.04]		
PTSD total score	0.98	[0.93, 1.02]		
Alcohol problems total score	1.08	[0.57, 2.03]		
Functional impairment	1.09	[0.91, 1.30]		
Model 3: Stigma: $R^2 = .17^{**}$ (n = 113)				
Treatment-seekers stigmatized	0.43*	[0.22, 0.81]	0.40	[0.15, 1.04]
Differential treatment stigma	0.67	[0.43, 1.06]		
Career stigma	0.92	[0.57, 1.50]		
Model 4: Treatment attitudes: $R^2 = .27^{***}$ (n = 113)				
Negative beliefs of treatment	0.96	[0.44, 2.11]		
Negative beliefs of meds	0.66	[0.34, 1.29]		
Self-reliance	0.47*	[0.26, 0.87]	0.37*	[0.17, 0.81]
Positive beliefs about treatment	2.22*	[1.04, 4.74]	2.06	[0.80, 5.30]
Model 5: Support for treatment: $R^2 = .11^{**}$ (n = 113)				
Practical barriers	0.86	[0.53, 1.40]	2.14*	[1.12, 4.08]
Social support for treatment	1.75*	[1.08, 2.86]		

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

individual needs (Zinzow et al., 2013). Furthermore, we have noted key distinctions between barriers that were not well-defined in previous studies. For example, although perceived differential treatment stigma (i.e., stigma from others) was more prevalent, stigmatizing perceptions of treatment-seekers (i.e., stigma towards others) was a stronger correlate of treatment-seeking behavior. It may be that participants have internalized beliefs such as "I would have less confidence in a unit member who had received mental health treatment" and apply them more strongly to themselves than perceived stigmatizing beliefs held by others. For SA victims, these beliefs may take the

form of fearing that they will be blamed for the assault (Ullman, 2007). Only self-reliance, however, was significant in the final model and thus may have partly accounted for the relation between stigma and treatment seeking.

In addition to delineating specific barriers associated with treatment seeking, our study added to prior literature by including facilitators. Consistent with previous research on SA victims (Ullman & Brecklin, 2002) social network encouragement was both prevalent and a uniquely predictive facilitator among treatment seekers. Novel facilitators identified in this study included positive beliefs about treatment, such as

perceiving treatment to be helpful or as a way to care for one's self. Furthermore, many treatment seekers reported facilitators that could help them overcome practical barriers to care, such as knowing where to get treatment, having leaders that allowed time off work, and having scheduling flexibility.

In contrast to prior literature on mental health service use among SA victims, minority race/ethnicity was positively and independently associated with treatment seeking. Our findings are consistent with a previous study, however, that found Black race to be positively associated with posttrauma medical service use (Zinzow, Resnick, Barr, Danielson, & Kilpatrick, 2012). Further research is required to explore whether racial differences in treatment seeking are related to variations in assault characteristics, treatment beliefs, social support, or treatment needs. The positive association between SA during military service and treatment seeking could potentially be explained by trauma recency and increased treatment needs among these soldiers. Surprisingly, mental health symptoms were not associated with treatment seeking. Therefore, assisting soldiers in recognizing symptoms and the benefits of treatment could potentially reduce the observed discrepancy between mental health diagnoses and treatment-seeking behavior.

Consistent with prior studies, more participants had sought informal support for their problems than had sought mental health treatment. Given that social support was an important facilitator for treatment, interventions should focus on educating and involving significant others, unit members, and leaders in treatment decisions. Our data suggest that when participants do seek formal treatment, they are most likely to receive individual therapy from military behavioral health providers. Informing service members of other sources of treatment, such as online resources, civilian providers, and telehealth therapy, could assist in reducing practical barriers and stigma associated with treatment seeking.

Limitations of the study include the cross-sectional, self-report design, which restricts causal interpretations and introduces the potential for reporting biases. The sample was limited to Army soldiers at one installation; therefore, findings may not generalize to the larger military population. We did not assess treatment-seeking history prior to the past year, or problems beyond PTSD, depression, and alcohol use. It is possible that these factors exerted effects on treatment-seeking behavior that could account for some of our significant findings. Our SA measure was limited to two items, and a behaviorally specific measure may have identified more victims. We did not capture detailed information on SA incident characteristics, such as repeated incidents and whether the assault was perpetrated by another service member. These factors may also influence barriers to care. Furthermore, mental health symptoms were not tied to the SA experience, and it was not possible to tell if participants were seeking help for an SA-related problem. The relatively limited sample of SA victims, particularly those who experienced SA during the military and/or sought treatment, may have attenuated some of the observed relationships between SA, barriers, and facilitators, and treatment seeking.

Finally, our study did not assess the type of treatment received (e.g., cognitive-behavioral). An important area for further investigation is to determine whether treatment protocols affect service use and dropout rates.

The findings from this study have several implications for research and intervention. For service members with SA history and current mental health problems, our results suggest that treatment-facilitating interventions should focus on (a) altering perceptions related to self-reliance, (b) recognizing the need for treatment, (c) increasing positive attitudes towards treatment, and (d) enlisting support from unit members, leaders, and significant others. Further research is needed to explore whether barriers to care differ as a function of SA incident characteristics, including military sexual trauma. Prospective studies are required to confirm causal linkages between barriers, facilitators, and treatment-seeking behavior. Finally, future studies should evaluate the efficacy of interventions to facilitate treatment seeking and treatment retention in military SA victims.

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Sexual Assault: Treatment Barriers and Facilitators

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Running head: DETERMINANTS OF TREATMENT SEEKING

Determinants of Mental Health Treatment Seeking Among
Soldiers who Recognize They have a Problem

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Abstract

Although research has documented an increased risk of mental health problems among employees in high stress occupations, little attention has been devoted to the determinants of whether employees seek treatment for these problems. The present research examined the correlates of considering and receiving treatment among military personnel. A multidimensional assessment of determinants of treatment seeking was administered to 1,725 military personnel, along with measures of mental health symptoms and treatment seeking. Confirmatory factor analyses provided support for a nine-factor model underlying the measure. Multinomial logistic regressions indicated that among soldiers who currently felt they had a mental health problem, attitudes toward treatment and a preference for self-reliance distinguished those who had not received treatment from those considering treatment. A larger number of factors distinguished soldiers considering treatment from those who actually received treatment, with organizational barriers being the strongest and unique correlate. The discussion focuses on the importance of what organizations can do to facilitate treatment seeking among employees.

Keywords: treatment seeking, high stress occupations, military, mental health treatment, stigma, self-reliance

Determinants of Mental Health Treatment Seeking Among

Soldiers who Recognize They have a Problem

Employees in many organizations are faced with high levels of stress that have the potential to create mental health problems, yet many employees in those organizations do not seek treatment when needed. In the present research we conduct a detailed analysis of the determinants of treatment seeking among active duty soldiers in the military, and examine the extent to which these determinants distinguish soldiers who consider and receive treatment. In addition, we address the extent to which the determinants of treatment seeking in the military extend to treatment seeking among employees in other high stress occupations.

The potential for exposure to traumatic stressors exists in many occupations, including military personnel deployed in support of combat operations, police officers involved in a hostage negotiation, and first responders such as firefighters and medical personnel being sent to different emergencies. Britt and McFadden (2012) reviewed evidence indicating the incidence of mental health problems among employees working in these types of highly stressful conditions is higher than the incidence of such problems in employees not working under these types of conditions. For example, military personnel are more likely to develop mental health problems if they are exposed to higher levels of combat (Hoge et al., 2004). Castro and Adler (2011) reported that the incidence of some form of mental health problem (i.e. Post-Traumatic Stress Disorder, depression, alcohol abuse) was 40% for those military personnel who spent more than 40 hours per week outside their base camp, and were therefore more likely to experience higher levels of combat exposure.

In addition to military personnel, mental health problems are pronounced in a number of additional occupations where employees are exposed to potentially traumatic events during the

course of their work, including emergency ambulance workers (Bennett, Williams, Page, Hood & Woollard, 2004), firefighters (Del Ben, Scotti, Chen, & Fortson, 2006), police officers (Rothberg & Wright, 1999), and war correspondents (Feinstein, Owen, & Blair, 2002).

Although it is well-recognized that adverse work conditions have the potential to create mental health problems among employees, surprisingly little research has investigated what determines whether employees get treatment for these problems. A small body of research on employee assistance programs (EAPs) addresses mental health resources that are available for employees in certain organizations, but less is known about what influences whether employees choose to utilize these resources (Cooper, Dewe, & O'Driscoll, 2011). In addition, the underlying premise of EAPs is that it is the employee's responsibility to take advantage of programs that are offered, and that the use of these programs reflects a tertiary level of prevention, affecting the relatively few employees who fail to cope with occupational demands. In most occupations, statistics regarding the percentage of employees who seek mental health treatment are not available. French, Roman, Dunlap, and Steele (1997) found that 11% of their sample utilized the EAP at their workplace. However, one difficulty with this type of research is that it is unclear what percentage of employees within a given organization have a mental health problem, and therefore it is difficult to estimate the percentage of those with a problem who do or do not get treatment. Furthermore, it is possible that employees may get treatment outside of formal EAPs.

Britt and McFadden (2012) argued that the receipt of needed mental health treatment by employees exposed to highly stressful events at work is the responsibility of the organization and its leaders. However, if organizations are going to facilitate employees seeking needed mental health treatment, the factors that are related to treatment seeking in these occupations need to be better understood. Previous research has shown that only a minority of military personnel with

mental health problems seek treatment. For example, Hoge et al. (2004) found that among active duty military personnel, between 23 and 40% reported seeking treatment for a mental health problem. Kim, Thomas, Wilk, Castro, and Hoge (2010) found the percentages of National Guard soldiers who reported seeking treatment were between 13 and 27%.

In order to understand why military personnel, as well as other employees in high risk occupations, do not get treatment, it is worth considering treatment seeking as a behavior. Therefore, theoretical models focused on understanding what predicts individual behaviors should apply to the behavior of treatment seeking. Britt and McFadden (2012) examined the Theory of Planned Behavior (TPB; Azjen, 1985) as an organizing framework for understanding the determinants of treatment seeking among employees in high stress occupations. According to the TPB, whether an individual will engage in a behavior is determined by their attitude towards the behavior, the views of others important to the individual regarding the behavior (subjective norms), and the perceived control the individual has over the behavior. Figure 1 provides an overall descriptive model for how various factors relate to one of these three primary components, which should relate to treatment seeking.

In addition to using the TPB to understand treatment seeking in high stress occupations, Figure 1 also highlights a component of the Health Belief Model (Rosenstock, Strecher, & Becker, 1988), which has been used to understand when individuals will engage in certain health-promoting behaviors, such as getting treatment for different problems. According to this model, one important factor not considered by the TPB is the severity of the symptoms facing the individual. In the context of mental health symptoms, if these symptoms are perceived as severe by the employee and impairing his or her functioning, treatment seeking should be more likely.

As a final theoretical issue in understanding an employee's decision to seek mental health treatment, it is important to recognize the process of an employee recognizing the need for treatment and actually getting treatment may occur in stages. According to the Stages of Change Model developed by Prochaska and DiClemente (1982), when individuals are deciding to make a change in their lives (i.e. get treatment for a mental health problem), they go through a series of stages in implementing the change. In the *pre-contemplation* stage, the individual is not aware of the problem. When individuals acknowledge a problem (i.e. I have a mental health problem), they progress to a stage of *contemplation*, where they consider doing something about the problem (i.e. consider getting mental health treatment). The final stage in the model is action, where the individual is working on the problem (i.e. actually receiving mental health treatment). Therefore, in the present study we examined the factors that distinguished between soldiers who had not sought treatment but were considering treatment, and between soldiers who were considering treatment and had actually received treatment.

In investigating why military personnel do not seek mental health treatment, initial research focused on the stigma associated with seeking treatment, and operational barriers that exist in a high workload environment (Britt, 2000; Hoge et al., 2004). In terms of stigma, most leaders in occupations where employees are exposed to potentially traumatic events expect their employees to demonstrate resilience in the face of stress; therefore, developing mental health problems may be viewed as a sign of weakness or grounds for removal from the organization (Britt, 2000; Hoge et al., 2004). Employees involved in high stress occupations such as the military, firefighting, police work, and emergency response place an emphasis on being resilient and handling problems themselves (Bamberger, 2009; Castro & Adler, 2011). Therefore,

admitting one has a mental health problem resulting from exposure to work demands is difficult for these personnel, and seeking treatment for these problems may be even more difficult.

In terms of operational barriers, employees in organizations such as the military may not know how to access mental health treatment, or believe they are unlikely to fit treatment into an already busy schedule (Britt et al., 2008; Hoge et al., 2004). Although these types of determinants are magnified in the military, they may also exist among employees in other occupations. For examples, employees who work long hours (e.g. attorneys, doctors) or who are embedded within highly cohesive, time-synchronized units (e.g., police, firefighters, first responders) may have difficulty working mental health treatment into their workday in a way that does not disrupt unit functioning.

In addition to perceived stigma and operational barriers, recent research has examined soldier attitudes toward mental health treatment as a determinant of treatment seeking among military personnel. Kim, Britt, Klocko, Riviere and Adler (2011) found that a factor representing negative attitudes toward treatment and a preference to deal with mental health problems on one's own best distinguished military personnel with a mental health problem who did not seek mental health treatment from those who did. Importantly, negative attitudes towards mental health treatment may also be found in other occupations where the expectation of resilience is the norm, including police officers (Wester, Arndt, Sedivy, & Arndt, 2010) and first responders (Royle, Keenan, & Farrell, 2009).

In addition to negative attitudes toward mental health treatment, military personnel and other employees in high stress occupations may exhibit a preference for managing problems themselves, rather than relying on mental health professionals (Adler, Britt, Kim, Riviere, & Thomas, 2015). Of course, utilizing one's own personal and social resources to address mental

health problems created by stressors at work is an appropriate first step toward resolving the problem. However, employees may need to seek mental health treatment from a professional when their own attempts to address the problem are not proving effective (e.g. symptoms do not improve or start to affect other people close to the employee).

In summary, previous research with military personnel has examined perceived stigma, operational barriers, attitudes toward mental health treatment, and a preference for self-reliance as factors that may be important in determining whether individuals seek treatment for mental health problems caused by highly stressful work. However, Zinzow et al. (2013) pointed out that researchers have not thoroughly examined additional organizational, leadership, and unit factors that may affect the decision to seek mental health treatment. These authors conducted qualitative studies on the determinants of treatment seeking among military personnel, including focus groups with soldiers of different rank, and individual interviews with soldiers who sought mental health treatment on active duty. Based on the results of these studies, the authors recommended developing additional measures assessing negative views of psychotropic medication, positive attitudes toward mental health treatment and professionals, social support for treatment seeking, and stigmatizing perceptions that soldiers have of fellow soldiers who seek treatment (Figure 1).

In the present research, we used both existing measures of determinants of treatment seeking and also generated items to assess the dimensions recommended by Zinzow et al. (2013) to examine mental health symptoms and treatment seeking in a large sample of military personnel. Our goals were to assess the underlying factor structure of the more comprehensive set of items and assess which factors distinguished those soldiers with a problem who reported seeking mental health treatment from those who did not. One additional contribution of the present study involves an examination of these factors within a sample of military personnel who

currently recognized they had a mental health problem, and then indicated if they had not sought treatment, were considering getting treatment, or had actually received treatment. This approach allowed us to examine whether certain factors distinguished soldiers who had not sought treatment from those who were considering treatment, and between those who were considering treatment and had sought treatment.

According to the stages of change model (Prochaska & DiClemente, 1982), different factors distinguish individuals who are contemplating a behavioral change versus actually making a behavioral change. Soldiers contemplating the receipt of mental health treatment may be particularly influenced by their beliefs about mental health treatment (e.g. whether it is effective or ineffective). In contrast, for soldiers to move from contemplating the receipt of treatment to actually getting treatment, they must overcome the barriers to scheduling an appointment and working treatment into their operational schedule. We examined the differential correlates of considering and receiving treatment after controlling for the functional impairment of the problem, as well as the mental health symptoms of post-traumatic stress disorder, depression, and alcohol problems. Finally, although we examined these issues among a sample of military personnel, it is our belief that many of the dimensions included in our measure are likely relevant to employees in other high stress occupations that share a similar organizational culture (e.g. resilience-focused, team-based tasks in high stress environments).

Method

Participants

A total of 1,911 active duty U.S. Army soldiers were surveyed on their garrison post. Of those soldiers, 1,725 (90%) provided consent for their responses to be used for research purposes. Analyses were conducted only with responses from soldiers who provided consent.

The majority of the sample was male (90%) and white (63%). Most soldiers were between the ages of 20 and 24 (46%) or 25 and 29 (27%). Soldiers in the sample had been in the military on average for 5 years ($SD = 5.55$). Most soldiers surveyed were junior enlisted (69%) or non-commissioned officers (NCOs; 24%), and 7% were officers.

Procedure

A survey designed to understand soldier perceptions and utilization of mental health services was administered to active-duty soldiers. The assessment took place over five consecutive days, consisting of 29 total sessions and a maximum of 200 soldiers per session. Soldiers arrived to a classroom facility on the Army post with their unit at times arranged with unit leadership. Two primary investigators and two graduate students were present at all sessions to administer the survey. An investigator first briefed the soldiers on the purpose of the study and soldiers were given an informational letter about the project. An ombudsman was present at each session to answer questions soldiers had regarding their participation. Soldiers indicated on an item at the beginning of the survey whether they agreed to have their responses used for research purposes. Soldiers could also choose not to respond to any of the survey questions. The study was approved by Clemson University's Institutional Review Board, and received oversight approval by the Office of Research Protection at the U.S. Army Medical Research and Materiel Command. Zinzow et al., (2015) used the present data set to examine the predictors of treatment seeking among a small sample of soldiers ($N = 113$) indicating a prior history of sexual assault, and to compare sexual assault victims to those with a mental health problem on the predictors.

Measures

Determinants of treatment seeking. In order to develop a thorough assessment of the factors that might influence soldiers to seek mental health treatment, we adopted two strategies.

First, we used 27 items taken from previously published studies on the determinants of treatment seeking among military personnel (Adler et al., 2015; Britt et al., 2008; Hoge et al., 2004; Kim et al., 2011). These items assessed *perceived stigma* (e.g. Getting mental health treatment would be embarrassing; Getting mental health treatment would hurt my chances of getting promoted), *operational barriers to care* (e.g. I do not know where to go to get mental health treatment; My workload does not allow time for mental health treatment), *negative attitudes toward treatment* (e.g. Mental health treatment would not treat my main problems; The idea of talking about my problems during therapy makes me uncomfortable), and *self-reliance* (e.g. I prefer to handle problems myself as opposed to seek mental health treatment; Strong people can get over psychological problems by themselves; see Mackenzie, Knox, Gekoski, & Macauley, 2004).

In addition, we generated 21 new items to assess four additional factors based on recent qualitative research with military personnel (Zinzow et al., 2013). The new items addressed *concerns with the use of medication to treat psychological problems* (e.g. The medications prescribed by mental health providers are usually addictive; Medications are not a good way to treat a mental health problem), *stigmatizing perceptions of soldiers who seek treatment* (e.g. I would have less confidence in a unit member who had received mental health treatment; I would not trust a soldier to have my back if I knew he/she were receiving mental health treatment), *positive attitudes toward mental health treatment* (e.g. Mental health treatments work; If someone has a mental health problem, seeking treatment is a sign of strength), and *social support for treatment-seeking* (e.g. Friends and family would encourage me to go get mental health treatment if I needed it; My fellow unit members would encourage me to go get treatment if I needed it). All items were responded to on a five-point scale ranging from strongly disagree (1) to strongly agree (5). The full measure is available upon request from the first author.

Self-reported mental health problem and treatment seeking. All participants responded to a self-report item asking "Are you currently experiencing a stress, emotional, alcohol, or family related problem?" Response options were yes (1) or no (0). Those soldiers who responded "Yes" to the question were asked to rate the severity of the problem on a scale from not at all severe (1) to very severe (7). Soldiers were also asked if they had considered getting treatment for the problem, with response options of "no," "yes, I am considering treatment," and "yes, I am receiving treatment." Another section of the survey assessed the location of the mental health treatment and the type of mental health treatment received.

Depression symptoms ($\alpha = .91$) were assessed using the 9-item Patient Health Questionnaire (PHQ) developed by Spitzer, Kroenke, and Williams (1999). Participants were asked how often they had been bothered by the listed items in the last two weeks. Response options were on a four point scale ranging from not at all (1) to nearly every day (4). A sample item was "little interest or pleasure in doing things". An additional impairment item asked participants to indicate how difficult the problems made it to do work, take care of things at home, or get along with others on a four-point scale ranging from not difficult at all (1) to extremely difficult (4).

Post-Traumatic Stress Disorder (PTSD) symptoms ($\alpha = .96$) were assessed using the 17-item PTSD Checklist (PCL; Weathers, Ruscio, & Keane, 1999). The items reflected reactions that soldiers sometimes experience following deployment or stressful life events, representing the DSM-IV symptoms of PTSD. Soldiers were asked to indicate how bothered they had been in the past month by any of the provided symptoms. A sample item was, "Repeated, disturbing memories, thoughts, or images of the stressful experience". Responses were on a five-point scale ranging from not at all (1) to extremely (5).

Alcohol problems. An alcohol problem was assessed using two items from the Two Item Conjoint Screen (TICS; Brown, Leonard, Saunders, & Papasouliotis, 2001). The TICS has been validated in military samples, and demonstrated sensitivity and specificity for alcohol use disorders (Bliese, Wright, Adler, Hoge, & Prayner, 2005; Santiago et al., 2010). Participants were first asked if they had consumed alcohol in the past four weeks. If they responded yes, they were further asked, "Have you felt you wanted or needed to cut down on your drinking?" and "Have you used alcohol more than you meant to?"

Functional impairment ($\alpha = .89$) was assessed with three items adapted from Sheehan Harnett-Sheehan, and Raj (1996). Participants were asked in reference to the past four weeks, how much stress or emotional problems had: limited your ability to do your primary military job, disrupted your social life, and disrupted your family life/home responsibilities. Response options were on a 5-point scale ranging from not at all (1) to extremely (5).

Identification of Soldiers with a Mental Health Problem

A total of 466 soldiers self-reported a current problem, with the average rating of problem severity being 3.87 ($SD = 1.84$). In order to examine the relationship between recognition of a problem and diagnosis for different disorders, we assessed the percentage of those soldiers reporting a problem who screened positive for PTSD, depression, and alcohol problems. For a soldier to be considered as meeting criteria for PTSD, they must have endorsed DSM-IV symptom criteria on their responses to the PCL (including one intrusion symptom, three avoidance symptoms, and two hyperarousal symptoms) and must have had a severity score (summed continuous responses) of 50 or higher (National Center for PTSD, 2012). For a soldier to be considered as experiencing Major Depressive Disorder, they had to endorse five or more symptoms on the PHQ for more than half of the days during the past two weeks and rated

moderate or above on the additional impairment item (Kroenke et al., 2001). Lastly, participants were considered as having an alcohol problem if they responded positively to at least one of the two TICS items.

In terms of the correspondence between the self-report of a current mental health problem and screening positive on PTSD, depression, or alcohol, of those who reported a problem, 28% also screened positive for PTSD, 28% also screened positive for depression, and 35% also screened positive for alcohol problems. Overall, 55% of those who indicated having a mental health problem screened positive on one of the three problems.

Of the 466 soldiers who had reported a current problem, 191 (41%) had not received treatment for the problem, 161 (35%) were considering treatment, and 105 (23%) were receiving treatment. Among those who were receiving treatment, most had attended at least three to seven visits (86%) within the past 12 months. The majority sought treatment from a mental health professional on base (87%), with fewer that also or alternatively sought treatment from a civilian mental health professional (25%) or a general medical doctor at a military (17%) or civilian (6%) facility. The most common type of treatment was individual therapy or counseling (84%), with fewer who also or alternatively received medication for a problem (53%), group therapy (25%), or marital or family therapy (31%).

Results

Confirmatory Factor Analysis on the Determinants of Treatment Seeking Items

A series of confirmatory factor analyses (CFA) were conducted using EQS 6.1 (Bentler, 2006) to examine how well the hypothesized eight-factor structure fits the covariances among the items. A split-sample approach was used, where the data file was randomly split into two groups. Our proposed eight-factor structure was examined with the first half of the sample and

modifications to the model were made based on those results to achieve optimal model fit. The final best fitting model was then applied to the second sample to determine if the fit remained consistent. In the model, factor variances were fixed to one, and the error covariances and covariances among the eight factors were freely estimated. For all tests of model fit, robust estimation methods were used due to high multivariate kurtosis, as indicated by Mardia's coefficient. Such robust methods are recommended for more reliable estimates when data is non-normal (Hu, Bentler, & Kano, 1992; Curran, West & Finch, 1996). Expectation-Maximization (EM) imputation was used to handle missing data; however, missing data were only imputed for participants who were missing less than 50% of responses. Twelve participants were excluded from analyses because they were missing more than 50% of responses, resulting in a final sample of 1,713 for the factor analyses.

Using the first random half of the sample ($N = 856$), the hypothesized eight-factor structure was tested. An initial test of the model indicted marginal fit to the data, $SB\chi^2(1052) = 3143.75, p < .01, CFI = .83, RMSEA = .05$ [90% CI: (.046, .050)]. To improve the fit of the model, factor loadings and results of the Lagrange Multiplier (LM) test were examined. Four items loaded less than .40 on their respective factor and were therefore removed from further analyses. Note one additional item loaded .39, but removing that item would result in a two-item factor. Thus, the item was kept. Results of the LM test also revealed six items that cross-loaded onto another factor. These items were also removed. Eleven error covariances suggested by the LM test to improve model fit were also added for items within the same factor that shared a similarity in wording (see MacCallum, Roznowski, & Necowitz, 1992). For example, two similar items within the operational barriers factor, "It would be difficult to get time off from work for mental health treatment" and "My workload does not allow time for mental health

treatment", were one of the allowed error covariances. After items were removed and covariances were added, the large number of participants still resulted in a significant χ^2 for the model, $SB \chi^2(626) = 1192.53, p < .01$; however, the revised model provided adequate fit to the data, $CFI = .94, RMSEA = .033$ [90% CI: (.030, .035)].

Although the hypothesized eight-factor model provided adequate fit to the data, an analysis of the LM test revealed the possibility that items on the perceived stigma factor might be better represented by two factors. Suggested error covariances from the LM test revealed that three items on the perceived stigma factor might represent a separate factor. Further examination of these items revealed they were all targeted toward career-related stigma (e.g. Getting mental health treatment would hurt my chances of getting promoted; Getting mental health treatment would lead to me getting discharged), whereas the other items on the perceived stigma factor were focused on differential treatment as a result of seeking treatment (e.g. Members of my unit might have less confidence in me if I received mental health treatment; I would be seen as weak if I received mental health treatment).

Given this potentially important distinction, a nine-factor model was tested where perceived stigma was separated into career stigma and differential treatment stigma. The same ten items that were excluded because they loaded less than .40 on their respective factor or cross-loaded onto a different factor in the eight-factor model were again excluded. Eight error covariances from the eight-factor model were again included for items within the same factor. Three of the error covariances from the eight-factor model were eliminated by creating the separate career stigma factor. Again the χ^2 was significant, $SB \chi^2(621) = 1171.65, p < .01$, but the model fit of the nine factor model improved from that of the eight-factor model, $CFI = .94, RMSEA = .032$ [90% CI :(.029, .035)]. A test of the change in the $SB \chi^2$ (Crawford & Henry,

2003; Satorra & Bentler, 2001) was significant, SB difference = 22.16, $p < .01$. Thus, our results suggest that a nine-factor structure provided the best fit to the data.

Alternative models were also tested with the first half of the sample to ensure a simpler structure did not provide adequate fit to the items. A one-factor structure was examined to provide additional support that our items captured multiple factors. As expected, a one-factor structure exhibited poor fit, SB $\chi^2(1127) = 6943.69$, $p < .01$, CFI = .53, RMSEA = .08 [90% CI: (.076, .079)]. An additional two-factor structure was tested where items were divided only into positively worded or negatively worded items. This structure also exhibited poor fit, SB $\chi^2(1079) = 6249.65$, $p < .01$, CFI = .57, RMSEA = .08 [90% CI (.073, .077)].

Lastly, two seven-factor structures were considered. In the first seven-factor structure, all stigma-related factors (career stigma, differential stigma, and stigmatizing beliefs about others) were combined into one factor. This model demonstrated worse fit than the eight- or nine-factor model, SB $\chi^2(1059) = 3991.95$, $p < .01$, CFI = .76, RMSEA = .06 [90% CI (.057, .059)]. The second seven-factor model combined the positive and negative attitudes toward getting treatment as an overall attitude toward treatment factor. This model also demonstrated worse fit than the eight- or nine-factor models, SB $\chi^2(1059) = 3518.70$, $p < .01$, CFI = .70, RMSEA = .052 [90% CI (.050, .054)]. Tests of the change in the SB χ^2 from each of the alternative models to the eight- and nine-factor models were all significant, thus supporting our proposed eight-factor and refined nine-factor model as a better fit to the data than the simplified alternatives.

Next, the nine-factor model, which exhibited the best fit to the data, was applied to the second half of the sample ($N = 857$). The nine-factor model also exhibited acceptable fit in the second group, SB $\chi^2(621) = 1312.05$, $p < .01$, CFI = .93, RMSEA = .036 [90% CI (.033, .039)]. A summary of all the CFA analyses is provided in Table 1.

Correlations Among the Determinant Subscales

The first two columns in Table 2 contain the means, standard deviations, and Cronbach alphas for the nine factors. As seen in Table 2, the most frequently endorsed barriers were differential treatment stigma, operational barriers, negative beliefs about medications, and self-reliance. The positive factors of social support for treatment and positive views toward treatment were more highly endorsed than the barriers. Table 2 also presents the correlations among the nine factors. All factors were significantly correlated with one another. The strongest correlation was between career stigma and differential treatment stigma. The remainder of the correlations were moderate to small.

Associations between Determinants and Treatment Seeking Among Soldiers who Recognized Having a Current Problem

A second set of analyses was conducted among military personnel who indicated they had a current mental health problem and then responded to a question regarding whether they had considered or received treatment for the problem, with the response options being No, Considering Treatment, or Received Treatment. A series of multinomial logistic regressions were conducted with each individual determinant predicting membership in the three categories after controlling for rank, gender, symptoms, and functional impairment caused by symptoms. Functional impairment emerged as a predictor of soldier's considering getting mental health treatment, with greater impairment being associated with a greater likelihood of considering treatment. However, functional impairment did not differentiate those considering treatment from those receiving treatment.

The results for each predictor are summarized in Table 3, and address whether each determinant was an overall predictor of category membership, as well a predictor of differences

between the three different categories. As seen in Table 3, all of the determinants with the exception of social support for treatment-seeking and negative views of medication were related to category membership overall. When examining predictors of the different categories, relatively few determinants distinguished soldiers who had not sought treatment from those who were considering treatment. Positive beliefs about treatment were related to a greater likelihood of considering treatment, whereas negative beliefs about treatment and self-reliance were predictive of a lesser likelihood of considering treatment. When the three determinants were entered into the multinomial logistic regression simultaneously, only self-reliance emerged as a significant correlate [Wald (1) = 5.59, $p < .02$, Odds Ratio = .59]. Soldiers who preferred to manage problems themselves were less likely to consider getting treatment for their problem.

When examining the factors that distinguished between soldiers considering treatment versus actually receiving treatment, perceived stigma to career, perceived stigma of differential treatment, operational barriers, negative beliefs about treatment, stigmatizing beliefs about others, and self-reliance were all related to a reduced probability of getting treatment, whereas positive beliefs were related to an increased probability of getting treatment. When these variables were entered simultaneously into a single multinomial regression, only operational barriers uniquely differentiated between those considering treatment versus those receiving treatment [Wald (1) = 7.89, $p < .01$, Odds Ratio = .58]. Soldiers reporting greater operational barriers were less likely to actually get treatment for the problem.

Discussion

The results of the present study contribute to our understanding of treatment seeking in high stress occupations in multiple ways. The findings support a more comprehensive analysis of the determinants of treatment seeking and the different correlates of reported treatment seeking

among military personnel reporting a mental health problem. In the remainder of the discussion we address these contributions in more detail, consider the limitations of the study, and discuss directions for future research.

Our study identified nine factors that accounted for items addressing the determinants of treatment seeking in the military. Five of these factors were drawn from the existing literature (Adler et al., 2015; Britt et al., 2008; Hoge et al., 2004; Kim et al., 2011), while four were novel measures. The four novel measures included positive beliefs regarding mental health treatment, sources of social support for treatment seeking (positive beliefs but not social support positively associated with treatment seeking), negative attitudes toward the use of medications to treat mental health problems, and stigmatizing beliefs about others who seek treatment (stigmatizing beliefs but not negative attitudes toward medications negatively associated with treatment seeking). These additional measures help to more comprehensively assess the determinants of treatment seeking identified in qualitative research by Zinzow et al. (2013).

Examining these determinants among military personnel who indicated they were currently experiencing a mental health problem, and then examining what distinguished between those who had not sought treatment, were considering treatment, or had sought treatment, allowed us to assess the unique predictors of soldiers at different stages regarding the behavior of treatment seeking. After controlling for functional impairment (which was positively related to considering treatment) and mental health symptoms, positive and negative beliefs about treatment, along with self-reliance, distinguished soldiers who had not sought treatment from those who were considering treatment, with a preference for self-reliance being the only unique predictor.

These results suggest that positive perceptions of treatment and a lesser preference for dealing with problems oneself may lead soldiers to consider mental health treatment as a viable option for addressing a problem, moving soldiers to the contemplation phase of the Stages of Change model (Prochaska & DiClemente, 1982). Past research has demonstrated the influence of negative attitudes toward getting treatment on treatment seeking (Kim et al., 2011). Our study further emphasizes the role of positive beliefs about treatment (Adler et al., 2015). We found that positive views toward treatment, but interestingly not negative views toward treatment, were uniquely associated with considering treatment. This suggests that emphasis on the benefits of treatment may be more powerful in encouraging soldiers to seek treatment than attempts to reduce negative perceptions (Adler et al., 2015).

Interestingly, a number of determinants distinguished soldiers considering treatment from those actually reporting the receipt of treatment after controlling for functional impairment (which was positively related to getting treatment) and multiple symptom measures, including multiple sources of stigma, self-reliance, positive and negative beliefs about treatment, and operational barriers. However, operational barriers emerged as the only unique predictor. These results indicate that operational barriers associated with lack of time for treatment and busy work schedule may be especially important in influencing soldiers who are contemplating getting treatment to actually engage in the behavior of receiving treatment.

The results of the present study hold practical implications for high stress occupations. When employees are faced with exceptional levels of stressors at work, it becomes an organization's responsibility to help the employee cope with any resulting issues (Britt & McFadden, 2012). Our comprehensive measure could be used to inform organizations of areas in need of intervention to increase treatment seeking rates. For example, training both supervisors

and employees to improve attitudes toward treatment or increase their knowledge about treatment could be valuable in enhancing unit and/or peer support and increasing treatment seeking behaviors. It is important to emphasize that many of the predictive factors from our study could be affected by organizational involvement. Organizations could create training and awareness campaigns designed to encourage treatment by improving views of treatment and teaching appropriate self-reliance in coping with mental health issues, as well as training on when self-reliance is not effective and professional help may be needed. Further, interventions could be designed to change perceptions about getting mental health treatment and the stigma associated with treatment at both the small-unit level and within the broader organizational culture.

Limitations and Future Directions

This study has a few limitations that suggest directions for future research. First, analyses were conducted cross-sectionally; thus, any conclusions about causality cannot be firmly established. Future research should examine the determinants of treatment seeking over multiple time points. Such prospective designs should identify an employee population ahead of time and then track the population for problem emergence and treatment seeking over an extended period of time. It would be especially valuable if studies could capture soldiers who had a problem but had not sought treatment, and then assess what predicts whether these soldiers decide to get treatment at a later time. Such longitudinal studies could help clarify causal events and changing perceptions in the treatment seeking process to better inform application of our findings to potential organizational interventions. Future research should also control for treatment seeking prior to their employment, and address the time that has elapsed between noticing a given problem and getting treatment for that problem.

As another limitation, all scales used in the present study were self-report. Thus, there are concerns about underreporting symptoms (e.g., Furnham, 1986). Efforts were taken to ensure anonymity of soldiers' responses to encourage honest reporting; however, future research could try to obtain objective data, such as from mental health providers, to compare to self-report items. Other concerns exist with common method variance associated with self-report data. However, Spector (2006) argued that the impact of the common method bias is not as significant as often believed. Further, many of our constructs of interest are individual perceptions that are best captured by self-report assessments.

In conclusion, the mental health of workers is a critical concern that can impact employee well-being, as well as organizational effectiveness, especially in high stress occupations. Employers should be aware of the mental health of their workers, as well as attitudes toward mental health problems, and make efforts to encourage those who may be suffering from a mental health problem to seek treatment. It is our hope that results of our study can be used for a more comprehensive assessment of factors that influence decisions to seek help for future research and application in high stress occupations.

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Table 1

Summary of Confirmatory Factor Analysis fit Indices for 1-, 2-, 8-, and 9- Factor Models for Group 1 and 9-Factor fit to Group 2.

	SB χ^2	df	CFI	RMSEA (CI)	SB χ^2 Difference (8 factor)	SB χ^2 difference (9-factor)
Group 1 (N = 856)						
Model 1: 1 Factor	6,943.69	1127	.53	.078 (.076, .079)	5,534.79**	5,562.57**
Model 2: 2 Factor	6249.65	1079	.57	.075 (.073, .077)	4,883.51**	4,910.26**
Model 3a: 7 Factor	3,991	1059	.76	.057 (.055, .059)	2,785.51**	2,808.41**
Model 3b: 7 Factor	3.518	1059	.70	.052 (.050, .054)	2,290.23**	2,312.96**
Model 3: 8 Factor	1,192.53	626	.940	.033 (.030, .035)		22.16**
Model 4: 9 Factor	1,171.65	621	.942	.032 (.029, .035)		
Group 2 (N = 857)						
9 Factor	1,312.05	621	.931	.036 (.033, .039)		

Note. SB χ^2 = Satorra-Bentler χ^2 .

Model 3a combined stigma-related factors of career stigma, differential treatment stigma, and stigmatizing beliefs about others into one overall stigma factor.

Model 3b combined the positive attitudes toward treatment and negative attitudes toward treatment into one overall attitudes toward treatment factor.

** $p < .01$, * $p < .05$.

Table 2
Means, Standard Deviations, Correlations and Reliability Coefficients of the Nine Determinants of Treatment Seeking Subscales.

Variable	M	SD	1	2	3	4	5	6	7	8	9
1. Career stigma	2.76	.93	(.82)								
2. Differential treatment stigma	3.11	1.03	.65**	(.92)							
3. Social support for treatment-seeking	3.67	.79	-.23**	-.28**	(.72)						
4. Operational barriers	3.07	.87	.39**	.48**	-.39**	(.77)					
5. Positive views toward treatment	3.56	.61	-.32**	-.29**	.34**	-.21**	(.80)				
6. Negative views toward treatment	2.93	.66	.41**	.45**	-.27**	.46**	-.47**	(.76)			
7. Negative beliefs about medication	3.21	.68	.25**	.26**	-.09**	.17**	-.17**	.36**	(.71)		
8. Stigmatizing beliefs about others	2.61	.69	.35**	.38**	-.23**	.26**	-.44**	.43**	.29**	(.80)	
9. Self-reliance	3.08	.76	.26**	.29**	-.15**	.18**	-.36**	.47**	.30**	.41**	(.68)

Note. Values listed in the diagonal, with parentheses, are Cronbach's alpha. ** $p < .01$ (2-tailed). N's range from 1718 to 1721.

Table 3

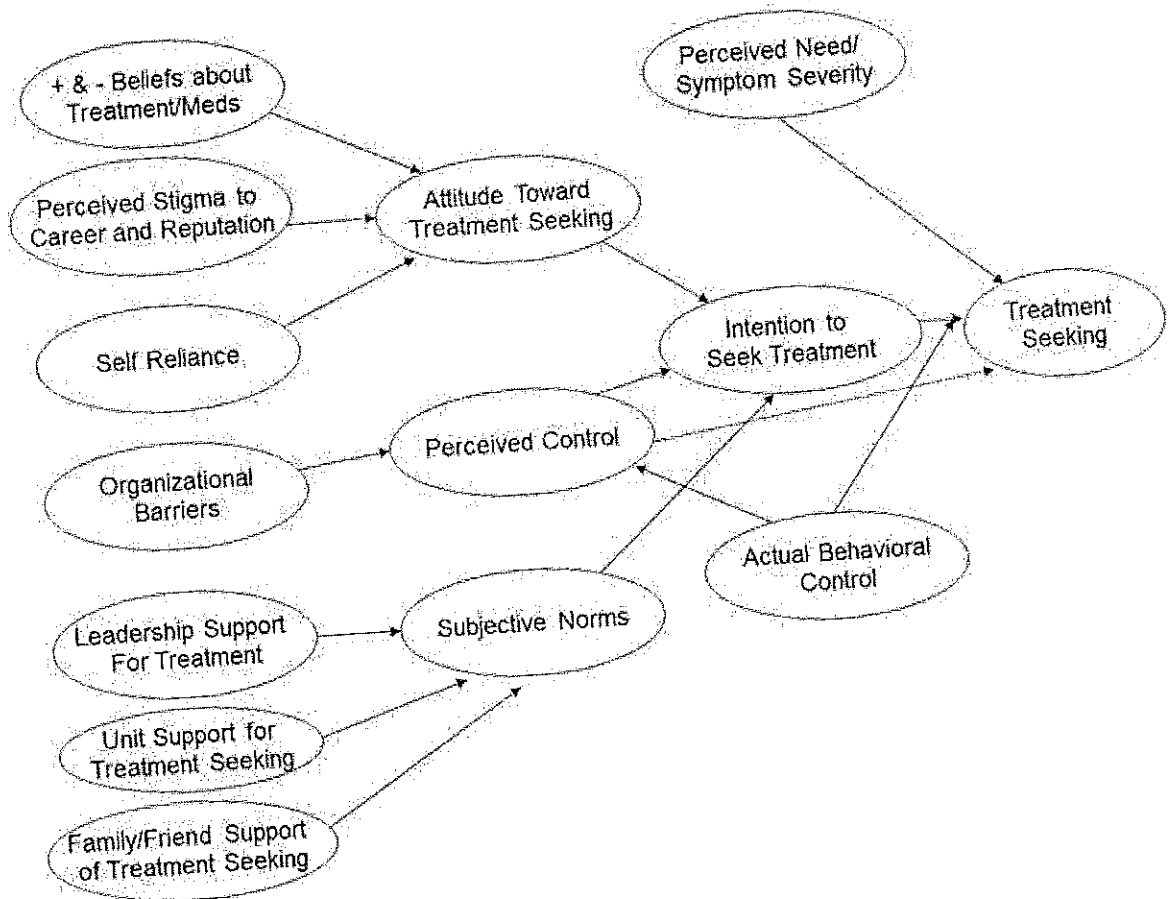
Individual predictors of whether soldiers reported not seeking treatment, considered seeking treatment, or sought treatment for a current problem

Variable	Overall Model ^a	No treat. vs. Considering ^b		Considering vs. Treat. ^c	
	Chi-Square (df)	Wald	Odds Ratio	Wald	Odds Ratio
<i>Step 1</i>					
Gender	2.00 (2)	NA	NA	NA	NA
Rank	5.80 (4)	NA	NA	NA	NA
Alcohol Symptoms	4.27(2)	NA	NA	NA	NA
Depression Symptoms	2.87(2)	NA	NA	NA	NA
PTSD Symptoms	4.76(2)	NA	NA	NA	NA
Func. Impair.	3.46(2)	NA	NA	NA	NA
<i>Step 2</i>					
Stigma Career	7.14 (2)*	.37	.91	4.31*	.67
Stigma Treatment	9.37 (2)*	1.41	.84	4.03*	.70
Facilitators	2.17 (2)	NA	NA	NA	NA
Organ. Barriers	13.60 (2)*	.17	1.08	11.25*	.44
Positive Beliefs	17.84 (2)*	8.34*	1.94	3.37	1.72
Negative Beliefs	14.53 (2)*	8.00*	.51	1.42	.73
Negative Med.	2.07 (2)	NA	NA	NA	NA
Stigmatizing Beliefs	13.53 (2)*	1.60	.77	5.98*	.52
Self-Reliance	31.82 (2)*	10.37*	.54	7.89*	.51

Notes. * $p < .05$. a = overall model, assesses whether predictor is associated with differences in three groups; b = model comparing those who did not seek treatment to those who considered getting treatment; c = modeling comparing those considering treatment to those who sought treatment. NA = not applicable because the variable was not significant in the overall multinomial regression. Each predictor in Step 2 represents a separate multinomial regression. Variables in **bold** emerged as unique significant predictors.

Figure 1

Determinants of Treatment Seeking in High Stress Occupations Organized Around Components of the Theory of Planned Behavior (Ajzen, 1985) and the Health Belief Model (Rosenstock et al., 1988)



1 **Soldier Recommendations for Improving Mental Health Treatment Seeking in the Military**
2 **In Press, *Military Behavioral Health***

3 **Abstract**

4 Despite the prevalence of mental health issues in the military, only a minority of
5 personnel who experience problems seek treatment. The underutilization of mental health
6 services continues to be an important topic that deserves attention from both science and practice.
7 Two studies were conducted with active-duty soldiers to assess their recommendations for
8 actions that can be taken by soldiers who are experiencing mental health problems, their peers,
9 their leaders, and the upper-level chain of command to facilitate mental health treatment-seeking.
10 In addition, we compiled their recommendations to raise awareness, reduce stigma, and improve
11 attitudes toward mental health treatment.
12

13
14 *Key words:* determinants of treatment-seeking, recommendations, soldiers, mental health
15 treatment, utilization of mental health services, interventions

16 **Soldier Recommendations for Improving Mental Health Treatment Seeking in the Military**

17 Military personnel, especially those who experience high levels of combat exposure, are
18 likely to develop some form of mental health problem that would benefit from mental health
19 treatment, including PTSD, alcohol abuse, and depression (Castro & Adler, 2011; Hoge et al.,
20 2004). However, only a minority of military personnel screening positive for a mental health
21 disorder utilize mental health care (e.g., Hoge et al., 2004; Kim, Thomas, Wilk, Castro, & Hoge,
22 2010; Milliken, Auchterlonie, & Hoge, 2007). The imbalance between expected needs and actual
23 utilization of mental health services highlights the importance of identifying factors that
24 influence mental health treatment-seeking within the military population (Vogt, 2011).
25 Additionally, given the prevalence of mental health problems in military personnel and the
26 detrimental consequences of untreated mental health issues, the determinants of treatment-
27 seeking among military personnel have received increased attention in the military psychology
28 literature.

29 A number of treatment-seeking determinants among military personnel identified
30 consistently across multiple studies include perceived stigma, career concerns, operational
31 barriers to care, negative beliefs and/or attitudes toward mental health treatment, a preference for
32 self-reliance, perceptions of leaders, and unit cohesion (Adler, Britt, Riviere, Kim, & Thomas,
33 2015; Britt et al., 2008; Hoge et al., 2004; Kim, Britt, Klocko, Riviere, & Adler, 2011; Pietrzak,
34 Johnson, Goldstein, Malley, & Southwick, 2009; Wright et al., 2009). Several other determinants
35 identified in a few recent studies include concerns about the use of medications, stigmatizing
36 perceptions of soldiers who seek treatment, positive attitudes toward mental health treatment,
37 social support for treatment seeking, perceived stigma of differential treatment, self-stigma from
38 seeking treatment, and psychological courage (Britt, Jennings, Cheung, Pury, & Zinzow, 2015;

39 Britt et al., under review; Mittal et al., 2013; Pury, Britt, Zinzow, & Raymond, 2013; Zinzow et
40 al., 2013). This line of research not only enhances our understanding of factors that might
41 influence soldiers seeking mental health treatment, but also provides valuable insights into
42 possible intervention avenues in facilitating the receipt of needed treatment.

43 While the determinants identified in past studies are constructive and informative for
44 intervention efforts, they may not always be practical or actionable. For example, it is not always
45 clear how stigma can be effectively reduced in military settings simply with the knowledge that
46 perceived stigma can statistically predict treatment-seeking. Therefore, the present study seeks to
47 gather specific information about how changes can potentially be made by examining the
48 recommendations military personnel have for *what* specific actions to take in reducing stigma
49 and other barriers to care. A majority of these past studies investigated the determinants of
50 treatment-seeking through scale instruments/quantitative assessments, while the current study
51 seeks to complement this line of research by employing qualitative methods that yield richer and
52 more detailed information. It has been argued by qualitative researchers that, while some of the
53 disadvantages associated with qualitative methods should be acknowledged, qualitative analyses
54 tend to provide greater descriptive richness and an “opportunity for illuminating insights.” (e.g.,
55 Trafimow, 2014, p, 17).

56 In the current study, we report interview data from two samples of active-duty soldiers
57 about their recommendations to encourage and support other military personnel to get treatment,
58 as well as specific resources and efforts that they believe will raise awareness, reduce stigma and
59 improve attitudes toward the receipt of mental health treatment. The first sample includes active-
60 duty soldiers of different ranks. The second sample includes soldiers who made the decision to
61 get treatment while on active-duty. Insights provided by military personnel themselves allow a

62 closer examination of how changes can potentially be implemented in a practical manner, which
63 may complement and extend theoretical arguments or statistical findings. To our knowledge, no
64 other published paper has focused on recommendations provided by active-duty military
65 personnel in facilitating awareness about mental health and receipt of needed mental health
66 treatment among soldiers. Results from these two studies can be used to provide preliminary
67 insights and inform researchers and practitioners of possible strategies in which intervention
68 studies can be implemented to increase mental health services utilization. It is our hope that the
69 results from the current study can motivate future intervention-based studies (e.g., quasi-
70 experiments) in order to remove barriers that prevent soldiers from getting the treatment they
71 need.

72 **Method**

73 **Participants and Procedure**

74 *Focus Group Study.* This study was conducted with a sample of 78 active-duty soldiers
75 who were recruited through chain of command at a large U.S. Army base in the Southeast. A
76 total of 12 focus groups were conducted with these soldiers. Focus group participants were
77 grouped based on their rank to encourage open and honest communication, given that previous
78 research noted concerns regarding how leaders and commanders view soldiers that receive
79 mental health treatment. Three focus group discussions were conducted with each of the four
80 rank categories, including junior enlisted (E1-E4, $n = 19$), non-commissioned officers (E5-E7, n
81 $= 19$), company grade officers (O1-O3, $n = 21$), and field grade officers (O4-O5, $n = 19$). A
82 majority of the focus group participants were male (80%) and White (64%). The average age of
83 the focus group participants was 31.1 years old ($SD = 6.9$). The average number of combat
84 deployments was 1.8, with the average years of service being 9.3 ($SD = 6.3$).

85 The focus group discussions were conducted as part of a larger study that aimed to better
86 understand the barriers and facilitators of treatment-seeking among soldiers (see Zinzow et al.,
87 2013, for more details). Each session lasted about 60 to 90 minutes; the sessions were audio-
88 recorded and subsequently transcribed. The discussions followed a semi-structured format, the
89 questions were all open-ended, and participants were not restricted to the content of the questions.
90 The present study analyzed open-ended results that were given to response to the question "What
91 do you think are the best ways to encourage a soldier to get treatment for psychological
92 problems?", which resulted in a number of different recommendations. In addition, because all
93 interview questions were open-ended, and participants were allowed to freely insert their
94 opinions that may or may not be directly related to the questions, any responses that serve as
95 potential recommendations were coded and analyzed in this study.

96 *Individual Interview Study.* This study involved one-on-one interviews with a sample of
97 32 active-duty soldiers who were currently seeking mental health treatment at the behavioral
98 health clinic on post. These participants were recruited through the mental health professionals at
99 the behavioral health clinic. Participants included 17 junior enlisted, 14 senior enlisted and 1
100 officer. Most of the interview participants were males (91%) and White (78%). The average age
101 was 29 years old ($SD = 6.5$). The average number of combat deployments was 1.7 ($SD = 0.9$),
102 and the average years of service was 8.0 ($SD = 5.9$).

103 Similar to the first study, the individual interviews were conducted as part of a larger
104 study that was designed to have users of mental health services identify barriers and facilitators
105 of treatment-seeking among soldiers (Pury et al., 2013; Zinzow et al., 2013). Each interview
106 lasted about 60 to 90 minutes, and was audio-recorded and transcribed. Interviewers also
107 followed a semi-structured guide that included open-ended and follow-up questions. For the

108 present study, we focused on responses the interviewees gave that referred to recommendations
109 for facilitating access to treatment for soldiers. A recommendation-specific question included: "If
110 there were one thing you could tell someone who needs treatment that is not getting it, what
111 would it be?" As in the focus group study, any responses that serve as potential
112 recommendations that were provided in response to any other question in the interview were
113 coded and analyzed in this study.

114 **Analytic Procedures for the Two Studies**

115 The present study followed the 6 thematic analytic steps outlined in Braun and Clarke's
116 (2006) review. The aim of thematic analysis is to identify, analyze and report patterns (or themes)
117 within data, and yield findings in rich details (Braun & Clarke, 2006). It is a bottom-up and data-
118 driven approach without a priori hypotheses and theoretical boundaries. While qualitative
119 analyses using pre-existing theoretical frameworks (i.e., top-down approaches) may be preferred
120 by some scholars, it has been argued that thematic analyses are more flexible and reflect the
121 reality and true experiences of participants (Braun & Clarke, 2006; Trafimow, 2014).

122 First, the focus group and interview data were transcribed into electronic documents, and
123 the coder (i.e., the first author) conducted a general overview of the transcriptions, read and re-
124 read the transcriptions, noted initial ideas, and observed patterns related to recommendations for
125 treatment-seeking. Second, the initial codes/themes for recommendations were produced. At this
126 stage, only broad themes were identified. The recommendations generally fell under four broad
127 categories: (1) *Recommendations to soldiers and their peers*, (2) *Recommendations to leaders*, (3)
128 *Recommendations to mental health professionals*, and (4) *Recommendations for the Army as an*
129 *organization*. In the next step (the third step), specific recommendations quotes were extracted
130 from the transcriptions and combined under each of the corresponding broad categories.

131 The fourth step involved reviewing the themes, refining them, and making sure the
132 themes reflected the data as a whole. At this stage, the coder refined the themes by creating
133 meaningful sub-categories under the 4 broad categories. We conducted an extra step after this
134 phase in ensuring the recommendations categories, sub-categories, and the extracted quotes were
135 all agreed upon among all authors. Sub-categories and associated quotes were further refined
136 based on group discussion. The fifth step involved defining and labeling the final themes (or
137 categories). Lastly, the sixth step was to produce a report of the thematic analysis, including a
138 selection of vivid and compelling extracted examples/quotes.

139 **Results**

140 The results are organized around the four main targets of recommendations mentioned
141 above. Summaries of the recommendations for each category, along with frequencies of
142 endorsement and sample quotes indicative of these categories, are provided in Tables 1 to 4. The
143 full set of quotes can be requested from the corresponding author. Within each major category,
144 sub-categories are identified and ordered based on their average frequencies of endorsement
145 across the two samples.

146 **Recommendations to Soldiers and their Peers**

147 In this category, recommendations are directly addressed to soldiers who are
148 experiencing mental health problems and/or are needing assistance from mental health
149 professionals, and to their peers who also play a vital role in assisting and supporting their
150 counterparts. Soldiers indicated that, in order to facilitate soldiers' receipt of mental health
151 treatment, fellow soldiers need to (1) have peer support and a "buddy system, (2) recognize the
152 importance of taking care of themselves and their family members, (3) have courage to face
153 stigma, discomfort and/or the risks to recognize and receive treatment benefits, (4) be willing to

154 acknowledge and accept the existence of their problems, (5) hear success stories shared by their
155 peers, (6) recognize the benefits of treatment, (7) recognize that treatment can in fact help those
156 with mental health problems become better job performers, and (8) receive social support from
157 family and friends.

158 **Recommendations to Leaders**

159 This recommendation category includes soldiers' recommendations to leaders in
160 supporting their soldiers if they need mental health treatment. Leader support was consistently
161 mentioned as an important determinant of treatment-seeking. Particularly in military settings,
162 leaders have a great degree of leverage with their subordinates, and they should take advantage
163 of their influence to make a positive impact on soldiers. In particular, soldiers in the current
164 study specified that leaders need to (1) show their genuine support and encouragement to soldiers
165 in order to build a strong and supportive command climate, (2) take an initiative and work
166 proactively with soldiers in getting treatment, (3) build trust and close relationships with soldiers
167 so that soldiers will be more likely to disclose their mental health concerns to leaders, (4) have
168 open and honest communications (e.g., open-door policy) with soldiers in encouraging soldiers
169 to seek needed treatment and developing mutual understanding, and (5) share their own success
170 stories and experiences in reducing stigma perceptions associated with mental health.

171 **Recommendations to Mental Health Professionals**

172 Recommendations provided by soldiers under this category generally addressed changes
173 to increase utilization of mental health services and reduce attrition or dropout rates. Soldiers
174 highlighted that there should be (1) greater availability and accessibility of mental health
175 providers, (2) an option for soldiers to choose between civilian or uniformed providers based on
176 their personal preferences, (3) providers who are relatable and knowledgeable so that they can

177 more likely create a rapport with soldiers, (4) communications between patients and between
178 patients and providers so that soldiers can gain a new perspective to the issues they are facing.
179 Participants also highlighted that the benefits of talking can far outweigh the benefits of other
180 treatment options (e.g., medications). Next, (5) mental health providers should be present within
181 units and have regular interactions with soldiers so that soldiers can learn more about issues
182 related to mental health and treatment options, and (6) unless necessary, medications should not
183 be the first and only treatment option. There should be complementary therapy sessions (e.g.,
184 talking therapy) so that soldiers can more fully benefit from treatment. Providers must also be (7)
185 committed and dedicated in order to retain soldiers to come back for more sessions, and thus
186 increase the effectiveness of treatment. Lastly, there must be (8) consistency in treatment and
187 providers so that soldiers can progress through treatment in an efficient and effective manner.

188 **Recommendations for the Army as an Organization**

189 Recommendations grouped under this category illustrate the different ways the Army as
190 an organization can make changes in facilitating soldiers' receipt of mental health treatment.
191 Specifically, these recommendations are geared toward those leaders higher in the chain of
192 command, who have greater decision latitude and influential power in initiating Army-wide
193 changes. Soldiers pointed out that the Army should invest resources in (1) communications and
194 outreach in order to get accurate information regarding the prevalence and need for treatment out
195 to soldiers, (2) developing resources to raise awareness about mental health and facilitate mental
196 health treatment-seeking, including time, transportation to appointments, peer support programs,
197 advocacy programs, and training and educational opportunities for both soldiers and leaders, and
198 (3) removing hindrances due to Army policy and culture. While the mission is important,
199 soldiers stated that the Army should also be mindful of soldiers' health and well-being. In order

200 to facilitate successful missions, soldiers noted that the Army should insure that soldiers are both
201 physical and mentally fit. Lastly, the Army should implement policies and procedures in
202 addressing soldiers' (4) privacy (or confidentiality) concerns and (5) concerns with mental health
203 treatment adversely affecting their career. The Army should highlight (and share success stories)
204 that soldiers who get better after seeking treatment do in fact receive promotions, and that a
205 "high risk" classification does not directly affect promotion and is not a career-ender.

206 Discussion

207 The current study sought to organize recommendations from active-duty soldiers for
208 facilitating treatment-seeking among soldiers who are experiencing mental health problems. The
209 determinants of treatment-seeking in military personnel have received increasing attention from
210 scholars. Although the determinants identified in previous studies highlight important research
211 and intervention avenues, it is often unclear *what* actions should be taken to reduce stigma
212 perceptions and other barriers associated with treatment-seeking. The present study contributes
213 to the literature by utilizing qualitative methods and obtaining richer and actionable information
214 from active-duty soldiers regarding their strategies and recommendations to facilitate soldiers'
215 treatment-seeking. It is our hope that recommendations gathered directly from the service
216 members who need mental health services and those who share relationships with those who
217 need mental health treatment would aid the development of intervention experiments and
218 motivate changes being made.

219 Our analyses of 32 interviews and 12 focus groups conducted with a total of 110 active-
220 duty soldiers (both the general sample and treatment-seekers) revealed that recommendations fall
221 under 4 broad categories or cover 4 groups of military stakeholders. These results can be used by
222 researchers and practitioners in the development and implementation of intervention studies. For

223 example, given that social support from peers and leaders was one of the most frequently
224 mentioned determinants of treatment-seeking, researchers may develop training modules
225 emphasizing the importance of and facilitating a supportive climate among soldiers. Leadership
226 training can be formed in a way that educates leaders in recognizing symptoms and providing
227 appropriate support, while team training exercises can be developed to build group cohesion and
228 a supportive network.

229 Additionally, our results highlighted that soldiers who are experiencing mental health
230 problems, their peers, their leaders, mental health professionals, and the Army (or upper-level
231 chain of command) all have responsibility and leverage in facilitating treatment-seeking and
232 improving the quality of treatment-seeking experiences among soldiers. This not only highlights
233 that soldiers themselves are responsible for their own mental well-being, but that external
234 support from their family members, friends, peers, leaders, and the Army are imperative in the
235 process as well. These different groups of military stakeholders must work together to achieve
236 the best possible outcomes. This is because some actions taken by one group are likely to be
237 contingent on actions taken by another group. For example, without success stories shared by
238 peers and/or leaders, soldiers may not be able to recognize the potential benefits they may
239 receive should they seek treatment. In addition, it may not be feasible to increase availability or
240 accessibility of providers unless the Army allocates an appropriate amount of resources (e.g.,
241 finances) to the mental health care system. Further, leaders may not be able to provide support or
242 encouragement to the fullest extent unless they are properly trained and educated on mental
243 health issues (e.g., ways to recognize mental health symptoms and how to make a referral).

244 Therefore, we see these overlaps between recommendations for different groups as a cue
245 for collaborative actions. Both top-down and bottom-up approaches will likely be helpful in

246 facilitating a climate supportive of treatment-seeking. In particular, the entire chain of command
247 should explicitly express their support for mental health treatment and allocate resources in
248 raising soldiers' awareness of mental health issues (i.e., top-down), while soldiers must also play
249 a proactive role in communicating their needs and their experiences so that the chain of
250 command can provide necessary support accordingly (i.e., bottom-up).

251 Our study has some limitations that highlight some important areas for future research.
252 First, qualitative methods can be highly subjective (Trafimow, 2014). While our
253 recommendations offer insights into actions military stakeholders can take in facilitating
254 treatment-seeking, it is unclear which recommendations would be effective or ineffective.
255 Additional research is necessary to determine the effectiveness of some of the most frequently
256 mentioned recommendations. Experimental designs would be necessary to draw causal
257 conclusions about the effects of each recommendation on treatment-seeking. Researchers may
258 consider employing quasi-experimental designs with military samples, especially because it may
259 not be feasible to randomly assign soldiers into treatment and control groups.

260 Second, given our data were collected at one Army post, our findings may be limited in
261 its generalizability and they should be interpreted carefully. Soldiers from other posts, and
262 service members from other branches, may have different experiences with the mental healthcare
263 systems and thus have different recommendations to facilitate treatment. Researchers may
264 consider extending the current study by sampling additional posts, services and occupational
265 specialties to obtain further understanding of whether some the recommendations are
266 generalizable to military personnel across a variety of settings or specific to certain posts or
267 branches. These findings will shed light on the area(s) in which intervention investments would
268 yield the most benefits.

269 In conclusion, our study offers a number of important recommendations to soldiers who
270 need mental health treatment, their peers, their leaders and the Army as a whole in facilitating
271 soldiers' utilization of mental health services. Our findings underscore the importance of
272 collaborative actions, and also offer interesting directions for both researchers and practitioners.
273 The current study also highlights the importance of continuing our efforts in examining barriers
274 and facilitators in treatment-seeking, because mental health care continues to be underutilized
275 while mental health issues remain prominent in the military.

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Table 1. Recommendations to soldiers and their peers and sample quotes.

<u>Recommendations to soldiers and their peers</u>	<u>Focus groups (out of 12)</u>	<u>Interviews (out of 32)</u>	<u>Sample quotes</u>
(1) Peer support and "buddy system"	8 (67%)	17 (53%)	"...when you have support it makes it a lot better cause of course you don't feel alone, I mean you don't feel you are the only person going through that kind of stuff." "...they need to take care of themselves because the army is not always going to be there. One day the army is going to go away. You need to take care of yourself."
(2) Importance of taking care of self and family	4 (33%)	16 (50%)	"...it doesn't make you mentally weak, you're actually a stronger person if you go to behavioral health because you're recognizing the fact that you need assistance."
(3) Courage to face stigma, discomfort, the unknown, and/or the risks in order to receive the benefits from treatment	2 (17%)	16 (50%)	"If someone needs real help, and if they are not lucky enough to have a self-realization, I would just say, and I would hope that they would stop for a second and take the time to listen to what people say when they are around you. Because then you will, you'll realize that...that they, that you need to talk to somebody, you need help because there is something wrong." "...the key is getting the word out. Getting the word out to people who are willing to step up and say that they had gotten help and say I still got promoted."
(4) Acknowledge the problem	2 (17%)	8 (25%)	"...there's resources that help you control your emotions, how you feel. Accessing these resources will keep you, or help you have a more positive attitude, affirm that this isn't so bad."
(5) Success stories from peers	1 (8%)	10 (31%)	"I've seen a soldier go to mental health, and believe it or not, he got squared away. I feel like mental health actually saves careers. He was on his way out the door."
(6) Recognize the benefits of treatment	1 (8%)	10 (31%)	"You know...before, of course before you go into to talk to someone professional or whatever, you talk to friends and I don't know. I guess talking to enough people that I call friends and getting feedback from them, I just, eventually I was like, you know what, I'll talk to somebody."
(7) Treatment helps soldiers with mental health problems become better job performers	2 (17%)	5 (16%)	
(8) Support from family and friends	1 (8%)	7 (22%)	

Table 2. Recommendations to leaders and sample quotes.

<u>Recommendations to leaders</u>	Focus groups (out of 12)	Interviews (out of 32)	Sample quotes
(1) Leader support and encouragement	11 (92%)	16 (50%)	"I think it is the command climate, and the engaged leadership, that it has to be a positive command climate." "Sit them down. Talk to that soldier. Try to find out what is going on. And for the senior leadership, like the 1st SGT, or the company commander, the platoon leader, the Platoon SGT. But you also need to know your soldiers enough, to know when something doesn't look right. So that way, you can go talk to them. Find out what is going on and then decide, "this is what we can do to solve this. ""
(2) Take an initiative and work with soldiers proactively	11 (92%)	16 (50%)	"You have to be able to earn their trust. You have to be able to earn their trust to where they feel comfortable coming to you and just talk to you and tell you hey I got this going on. And then actually be able to see that you're trying to take care of them, trying to guide them in the right direction or whatever."
(3) Build trust and close relationships with soldiers	9 (75%)	11 (34%)	"Just if the soldier comes to you and talks to you about his or her issue, help him out, or her. Put him in the right spot. Talk to him. Let him know where to go. That's between you and the soldier and the commander. I think that's the best way it's taken care of."
(4) Communications between leaders and soldiers	6 (50%)	16 (50%)	"...senior leaders, especially some senior NCOs being very open about seeking treatment themselves even if it's just for marriage issues, PTSD, whatever the case may be. But we've seen some instances where they say, "Hey, I'll openly talk about it in front of these soldiers," which makes them feel more comfortable to go in and find help when they need it as well. Being open when there are issues that happen whether they be suicides, or ideation gestures, and making sure when the command tends to acknowledge it and say, "Hey, this happened. If you need something, do this, that, or the other thing."
(5) Leaders' success stories and experiences	9 (75%)	7 (22%)	

Table 3. Recommendations to mental health professionals and sample quotes.

<u>Recommendations to mental health professionals</u>	Focus groups (out of 12)	Interviews (out of 32)	Sample quotes
(1) Availability and accessibility of providers	4 (33%)	21 (66%)	<p>“...the biggest concern wait times; because you know an hour long appointment is a waste of time, when you add on top you have to wait 2 hours to get that hour.”</p> <p>“It’s harder to explain those mental issues to someone who doesn’t understand what’s going on. You try and talk to a civilian. I mean no offense, but unless you’ve had prior military service or you’ve been involved in the military through marital status or whatever, it’s just hard to understand.”</p>
(2) Civilian vs. uniformed providers	5 (42%)	15 (47%)	<p>“They need to have a soldier that has went through the same way I did. Decided to get commissioned and become a doctor as a social worker so that they can fully understand, because if you never walked in the shoes that someone that has been through it, you can fully never understand what they have been through.”</p>
(3) Relatable and knowledgeable	4 (33%)	13 (41%)	<p>“...being able to talk to someone and for someone to listen to you and help you see your issues in a different way and help you think or help you understand that your issues are not that bad.”</p>
(4) Communication between patients and between patients and providers	3 (25%)	15 (47%)	<p>“If, you know, if all you thought was that they were gonna put you on medication or something like that then you probably wouldn’t go, but, you know, if it was stated or known otherwise that, you know, they help or talk, you know, somebody, somebody just to talk to or something, maybe work through things with you.”</p>
(6) Concerns with medications	6 (50%)	2 (6%)	<p>“You know, he treated us like we were, all of us were humans. He worked himself to death. He did. He worked himself to death. He wouldn’t leave his office until midnight sometimes seeing patients and he did it the entire time he was there.”</p>
(7) Commitment and dedication	2 (17%)	11 (34%)	<p>“...talking to a different counselor and you need to start over again, which is probably the largest problem...is the fact that they need to, number one, have more doctors. And, number two, not switch doctors every, or switch counselors every time.”</p>
(8) Treatment and provider consistency	1 (8%)	9 (28%)	

Table 4. Recommendations for the Army and sample quotes

<u>Recommendations for the Army as an organization</u>	Focus groups (out of 12)	Interviews (out of 32)	Sample quotes
(1) Communications and outreach	9 (75%)	11 (34%)	<i>"If we don't preach it out properly to them and let them know it's OK, they're just gonna look it from other people that they meet... You get a lot of stories from other people, so they get the wrong information. If we don't preach it out properly, they won't get the right information."</i>
(2) Resources to raise awareness about mental health and facilitate mental health treatment-seeking	7 (58%)	11 (34%)	<i>"We need more training on how to pinpoint signs of soldiers that need help. Because a soldier is quiet does not mean that he is going to commit suicide. Some soldiers are quiet. So what kind of signs do we need to look for? Other than the soldier coming to talk to us. What other signs can we you know, do we need to be checking for to identify the soldiers."</i>
(3) Hindrances due to Army policy and culture	3 (25%)	10 (31%)	<i>"The mission has to come first no matter what. No matter what it is, no matter how simple or how complex it is, you know, it's got to be first and you know, kind of go go and take up the slack for other people whether I have to or not and just kind of put my issues on the back burner."</i>
(4) Privacy concerns	5 (42%)	3 (9%)	<i>"If I was the soldier, to me, the privacy would be a big issue, you know. I'd want to go knowing that I could just keep it between me and the person and not have to get my whole chain of command involved. So I think it's probably a big one for a lot of people."</i>
(5) Career concerns	2 (17%)	6 (19%)	<i>"The Army should drop that. If a soldier is recovered and fully, you know, capable of doing their job again, you know, after their getting treatment, they should go ahead and be able to be a drill sergeant or a recruiter. So they can continue their career."</i>

Running Head: CORRELATES OF DROPOUT

Correlates and Reasons for Mental Health Treatment Dropout among Active Duty

Soldiers

Abstract

Many soldiers who seek treatment for mental health problems drop out of treatment before it is complete. The present study examined factors that are associated with dropout among active duty soldiers. Soldiers who had sought treatment ($N = 260$) responded to measures of beliefs about mental health treatment, mental health symptoms, treatment-seeking behaviors, and treatment dropout. Fifty-seven soldiers reported dropping out before treatment was completed. Commonly endorsed reasons for dropout were that soldiers were too busy with work and a preference to handle the symptoms oneself. A series of logistic regressions revealed that depression symptoms ($OR = 1.07$), functional impairment ($OR = 1.49$), career stigma ($OR = 1.70$), differential treatment stigma ($OR = 1.62$), practical barriers ($OR = 1.76$), negative beliefs about treatment ($OR = 1.98$), and self-reliance ($OR = 1.78$) were associated with an increased likelihood of dropout. Positive beliefs about treatment were associated with a decreased likelihood of dropout ($OR = .60$). Functional impairment, career stigma, and self-reliance remained unique predictors in a final forward conditional regression. These findings highlight the need for interventions to support soldiers in treatment by educating them on the benefits of treatment and reducing practical barriers.

Keywords: military, treatment, dropout

Correlates and Reasons for Mental Health Treatment Dropout among Active Duty Soldiers

Mental health problems among active duty personnel have become a growing concern. Service members who have been deployed to conflicts in Iraq or Afghanistan (Operation Iraqi Freedom/Operation Enduring Freedom or OIF/OEF) experience high rates of mental health problems, ranging from 20-44% meeting criteria for posttraumatic stress disorder (PTSD), depression, alcohol use disorders, and other psychiatric diagnoses (Kim, Thomas, Wilk, Castro, & Hoge, 2010; Seal et al., 2009). Despite these substantial mental health needs, only a minority (13-50%) of soldiers with mental health problems seek treatment (Hoge, Auchterlonie, & Milliken, 2006; Kehle et al., 2010; Tanielian et al., 2008). Exacerbating the problem, many who begin treatment do not complete it (Hoge et al., 2014).

Data from both civilian and military populations suggest that about one in five individuals who seek treatment for mental health problems (19-24%) drop out and therefore do not receive adequate care (Edlund et al., 2002; Hoge et al., 2014; Wang, 2007). Psychotherapy dropout results in negative consequences, including reduced treatment efficacy, decreased cost-effectiveness, poor symptom outcome, and increased mortality rates (e.g., Davis et al., 2012; Wierzbicki & Pekarik, 1993). Therefore, it is important to understand the prevalence and determinants of treatment dropout in at-risk populations in order to mitigate these consequences.

Despite a high prevalence of mental health problems, research on determinants of dropout in military samples is limited and primarily focused on veterans with PTSD. Regarding demographic characteristics, young age, Black race, and low income have been positively associated with treatment dropout in OEF/OIF veterans with PTSD (Harpaz-Rotem & Rosenheck, 2011). Although symptom severity and functional impairment appear to relate to dropout, findings are mixed. One study of OEF/OIF veterans found a negative relationship

between depression and dropout (Erbes et al., 2009), whereas another found that comorbid diagnoses of substance use disorder, bipolar disorder, and schizophrenia were positively associated with treatment dropout in veterans with PTSD (Harpaz-Rotem & Rosenheck, 2011).

Military culture can present unique barriers to care, including an emphasis on self-reliance, the importance of subverting one's needs to the organizational mission, and stigma associated with mental health treatment-seeking (Zinzow et al., 2013). Additionally, active duty soldiers face practical barriers that include frequent change of duty location and high work demands (McLay et al., 2011). Therefore, it is also important to understand the effects of treatment attitudes and practical barriers on treatment dropout. One study found that the most frequently reported reasons for dropping out included: a) soldiers feeling they could handle problems on their own; b) being too busy with work; c) lack of comfort with the mental health professional; d) stigma; and e) treatment didn't seem to be working (Hoge et al., 2014). However, this study was limited to soldiers seeking treatment for PTSD, and did not examine the statistical association between independent assessments of these factors and treatment dropout.

Another significant gap in the literature is a lack of information on factors that facilitate treatment seeking, which could also improve treatment retention. Factors associated with treatment initiation in prior studies of active duty soldiers include positive leader behaviors, positive attitudes toward treatment, and social network support (Britt, Wright, & Moore, 2012; Wright et al., 2009; Zinzow et al., 2013). These factors could affect soldiers' attitudes and the unit climate and therefore, a soldier's likelihood of remaining in treatment.

More research is needed that examines not only the reasons for treatment dropout, but also the factors associated with dropout in active duty military samples. An improved understanding of factors associated with treatment dropout could inform efforts to increase

treatment retention, thereby improving treatment cost effectiveness and reducing mental health burden among this at-risk population. The two purposes of the current study were to: a) describe patterns and reasons for self-reported treatment dropout to replicate the findings of Hoge et al., (2014), using a more inclusive sample of soldiers experiencing PTSD, depression, alcohol problems, or a self-reported problem, and b) to examine both positive and negative correlates of reported dropout in an active duty soldier sample.

We utilized a comprehensive assessment of treatment barriers and facilitators, which represents an extension of the factors assessed in prior studies of active duty soldiers (e.g., Hoge et al., 2014; Britt et al., 2015b). Factors drawn from previous studies of military personnel included perceptions of stigma, career concerns, practical barriers to care, negative beliefs about treatment, and self-reliance. Novel factors developed by Britt et al., (2015b) included concerns about psychiatric medications, stigmatizing perceptions of individuals who seek treatment, positive beliefs about treatment, and social support for treatment-seeking.

Using the same sample of military personnel examined in the current study, Britt et al., (2015a) examined the role of stigma in whether active duty military personnel reported dropping out of treatment, finding positive associations between perceived stigma, self-stigma, and treatment dropout. While the study conducted by Britt et al., (2015a) was specifically focused on how different stigma perceptions can impact both treatment seeking and retention, we sought to extend these findings by focusing exclusively on treatment retention with a broader array of predictors because correlates of dropout have not received sufficient attention in the literature. In the present study, we sought a more comprehensive understanding by considering the additional determinants of treatment seeking as well as demographic variables and mental health symptoms

of depression, PTSD, and problems with excessive alcohol as correlates of dropout. In addition, we examined the different reasons military personnel gave for dropping out of treatment.

Based on previous research, we expected minority race, male gender, younger age, and less education to be positively associated with reported treatment dropout. Analyses examining the relationships between symptom severity and dropout were exploratory in nature, given mixed findings on this relationship in past research in veteran populations. In regards to the determinants of treatment-seeking, we expected that positive attitudes towards treatment and social support for treatment would be negatively associated with dropout. Finally, we expected that stigma, self-reliance, practical barriers, career concerns, and negative attitudes towards treatment would be positively associated with treatment dropout.

Method

Participants

A total of 1,624 active duty soldiers completed a survey assessment, and 1,324 (82%) provided consent for their responses to be used for research purposes. The sample used for the present study was restricted to only those soldiers who had indicated they had sought treatment for a mental health problem within the past 12 months ($N = 260$). The sample was predominantly male (89%) and white (63%). Most soldiers were aged 20 to 24 (36%) or 25 to 29 (31%). Sixty-five percent were junior enlisted, 35% were officers. Average military tenure was 6.2 years ($SD = 6.2$).

Procedures

Prior to data collection, the Clemson University Institutional Review board approved the study protocol, as did the U.S. Army Medical Research and Material Command's Office of Human Research Participants Oversight Board. Soldiers from an Infantry Brigade completed the

survey in garrison as a component of pre-deployment processing over the course of three weeks. The survey contained assessments of mental health symptoms, self-reported treatment-seeking information, and perceptions of mental health treatment-seeking. Soldiers were briefed as a group on the purpose of the study and were provided informed consent documents with additional details. Soldiers completed the survey while waiting at processing stations or at the research team's designated station. The measures used in the present study were drawn from a larger assessment that is more thoroughly described by Britt et al. (2015a), which only examined the three different types of stigma as correlates of reported dropout, but did not examine the relationship between symptoms and the remaining determinants of treatment-seeking in relation to dropout, and did not examine reasons for dropout.

Measures

Demographics. Items assessed gender, age, marital status, race/ethnicity, highest completed education, and military tenure. Gender was coded as male (0) or female (1). Age was coded as 18 to 24 (0), 25-29 (1), and 30 or older (3). Marital status was coded as single (including never married, separated, divorced, or widowed; 0) or married (1). Race/ethnicity was coded as Caucasian (0), Black (1), Hispanic (3), or other (including Asian, multi-racial, and other responses; 4). Education was coded as having no college degree (including less than a high school diploma to some college; 0) or a college degree (associate's, bachelor's, master's, or doctorate degree; 1). Military tenure was assessed with a continuous variable in years.

Treatments Received. The type of treatment that soldiers received was assessed with nine items on the source or location of the treatment provider and six items on the type of treatment. In regards to provider type, soldiers were asked to indicate if they had received mental health services for a stress, emotional, alcohol, or family problem from any of nine listed

professionals, including: four on-post mental health providers (three specific on-base locations offering similar services and an option for “another military facility”, but did not include a specific option for embedded providers), a mental health professional at a civilian facility, a primary care doctor at a civilian or military facility, a chaplain or spiritual advisor, or any other sources. Soldiers were asked to mark all options that applied, with response options of yes or no.

Soldiers were also asked to indicate if they had received any of six provided treatments within the past 12 months. Treatments listed included: Individual therapy or counseling, assessment testing sessions for a mental health problem, group therapy, medication for a mental health problem, marital or family therapy, alcohol or substance abuse treatment, inpatient psychiatric hospitalization, telehealth, or internet-based therapy. Soldiers were asked to mark all options that applied, with response options of yes or no.

Mental Health Treatment-Seeking. Soldiers were considered to have sought treatment if they reported that they had: a) sought treatment for a mental health problem or received professional mental health services from any of nine provider types in the past 12 months b) received any of six possible treatments that were provided within the past 12 months c) attended mental health visits in the past 12 months with response options of 0, 1-2, 3-7, 8-12, and more than 12; or d) started treatment but dropped out.

Treatment Dropout was assessed with one item: “Did you start receiving mental health treatment in the past 12 months, but stopped or dropped out before completing the treatment?” with response options of yes or no.

Treatment Dropout Reasons were assessed with a 28-item measure, which included 23 items developed by Hoge et al. (2014) and four additional items that were included based on findings from qualitative studies (Zinzow et al., 2013). Those soldiers who had responded that

they had dropped out of treatment were asked to indicate their reason(s) for dropping out from the list of 28 options. Sample items included “Got better and didn’t need further treatment” and “Too busy with work”.

Determinants of Treatment-Seeking. A 38-item measure from Britt et al., (2015b) was used to assess barriers and facilitators of treatment-seeking. Britt et al. (2015b) found support for a nine-factor structure, with five factors that were drawn from previous literature (Britt et al., 2008; Kim et al., 2011): *differential treatment stigma*, which indexed a concern with being treated differently as a result of seeking treatment (e.g., Getting mental health treatment would be embarrassing; $M = 2.94, SD = 1.02, \alpha = .92$), *career stigma* (e.g., Getting mental health treatment would hurt my chances of getting promoted; $M = 2.59, SD = .97, \alpha = .84$), *practical barriers to care* (e.g., I do not know where to go to get mental health treatment; $M = 2.96, SD = .82, \alpha = .77$), *negative beliefs about treatment* (e.g., The idea of talking about my problems during therapy makes me uncomfortable; $M = 2.91, SD = .67, \alpha = .78$), and *self-reliance* (e.g., I prefer to handle problems myself as opposed to seek mental health treatment; $M = 2.87, SD = .71, \alpha = .65$).

Four additional factors were newly developed by Britt et al., (2015b) based on prior qualitative research by Zinzow et al. (2013) to assess additional factors that may influence treatment seeking behaviors. These factors included: *concerns with the use of medication to treat psychological problems* (e.g., Medications are not a good way to treat a mental health problem; $M = 3.02, SD = .70, \alpha = .74$), *stigmatizing perceptions of soldiers who seek treatment* (e.g., I would have less confidence in a unit member who had received mental health treatment; $M = 2.51, SD = .66, \alpha = .81$), *positive beliefs about mental health treatment* (e.g., Mental health treatments work; $M = 3.61, SD = .64, \alpha = .82$), and *social support for treatment-seeking* (e.g.,

Friends and family would encourage me to go get mental health treatment if I needed it; $M = 3.58$, $SD = .78$, $\alpha = .74$). Responses were on a five-point scale ranging from strongly disagree (1) to strongly agree (5).

PTSD Symptoms were assessed using the 17-item PTSD Checklist (Weathers, Ruscio, & Keane, 1999). This measure has been supported as a valid indicator of PTSD symptoms in military samples (e.g., Bliese et al., 2008). Symptoms experienced over the past month were rated on a five-point scale ranging from not at all (0) to extremely (4), and were summed for a continuous index of symptom severity ($M = 39.11$, $SD = 16.71$; $\alpha = .95$). A dichotomous variable was used to categorize participants who met DSM-IV criteria for PTSD and scored higher than 50 for severity. The score of 50 is a somewhat high cutoff, used in military samples (National Center PTSD, 2012). Seventy-five soldiers (28%) met study criteria for experiencing PTSD.

Depression Symptoms were assessed using the 9-item Patient Health Questionnaire (PHQ) developed by Kroenke, Spitzer, and Williams (2001). The PHQ has been shown to be a valid indicator of depression in military settings (e.g., Hoge et al., 2004). Soldiers rated symptoms experienced during the past two weeks on a four-point scale ranging from not at all (1) to nearly every day (4). Responses were summed to index symptom severity ($M = 7.27$, $SD = 6.80$; $\alpha = .91$). Those who endorsed experiencing functional impairment and five or more symptoms during the past two weeks were scored as positive for depression (Kroenke et al., 2001). Forty-seven soldiers (18%) met these study criteria for experiencing major depressive disorder (MDD).

Alcohol Problems were assessed using the Two Item Conjoint Screen (TICS; Brown, Leonard, Saunders, & Papasouliotis, 2001). The TICS has demonstrated acceptable sensitivity to detect problems with excess alcohol in military settings (e.g., Bliese et al., 2005); however, we

note that this is intended to be a screening tool and not a diagnostic test. The items reference the past four weeks, with yes or no response options. Soldiers were considered to have an alcohol problem in the present study if they responded yes to at least one item. Forty-two (16%) screened positive in the present study.

Functional Impairment was assessed using three items adapted from Sheehan et al. (1996). Participants were asked how much stress or emotional problems had interfered with occupational, social, and family functioning over the past four weeks. Responses were on a five-point scale ranging from not at all (1) to extremely (5; $M = 1.98$, $SD = 1.13$; $\alpha = .92$).

Data Analysis

Initial descriptive statistics and response frequencies were computed to determine the reported frequencies of mental health visits, types of treatment options used, the frequency of dropout, and the reasons endorsed for dropping out of treatment. A series of logistic regressions were conducted to examine the statistical relationships between the proposed predictor variables and reported treatment dropout. First, each predictor was entered independently into univariate regressions. Predictors included demographic variables, mental health symptoms, and the nine determinants of treatment seeking from Britt et al. (2015). Second, a final conditional stepwise logistic regression was conducted, including all significant univariate predictors. Using this technique, all predictors are entered in steps into a multivariate model, but only those that improve the model are retained. All analyses were conducted using SPSS v.22.

Results

Descriptive Statistics: Treatment Seeking and Reasons for Dropout

In the sample of 260 soldiers who had reported seeking treatment, 28% indicated they had attended one to two visits, 24% had reported attending three to seven visits, 14% reported

attending eight to twelve visits, and 7% reported more than 12 visits. The most commonly reported type of treatment received was individual therapy or counseling (61%), and the most common provider type was an on-post behavioral health provider (52%). The types of treatment received and provider types of those who reported dropping out of treatment were similar to those who had not dropped out of treatment (Table 1). Chi-square tests of independence comparing the proportions of those who did or did not drop out of treatment for each type of treatment and provider type revealed no significant differences between the two groups.

In total, 57 soldiers (22% of those who had reported seeking treatment) reported that they had stopped treatment before it was completed. Many soldiers who had dropped out of treatment within the past 12 months reported experiencing current mental health symptoms, with 16 of the 57 (28%) meeting study criteria for MDD, 25 (44%) meeting study criteria for PTSD, and 13 (30%) meeting study criteria for a problem with alcohol. Thirty soldiers (57%) also self-reported experiencing a current problem. The most commonly endorsed reasons for dropout were that soldiers were too busy with work, perceived that they could take care of problems on their own, and believed that appointments were not available or too far apart. Many also reported that they felt their symptoms had gotten better and they did not need treatment (Table 2). We conducted further exploratory analyses using only those who reported stopping treatment because they felt they got better to better understand if these individuals were still experiencing a problem and whether they differed from others who dropped out for other reasons. This group did report lower symptom levels than those who did not endorse that they got better: There were also significant differences in current symptoms levels: PTSD symptoms, $t(55) = 3.80, p < .001$; depression symptoms, $t(54) = 4.20, p < .001$; functional impairment, $t(55) = 4.84, p < .001$. However, a sizeable portion (53%) of those who reported they got better continued to report a

current problem or screen positive on measures of PTSD, depression, or an alcohol problem according to study criteria. Further, 70% of soldiers who endorsed the “felt they got better” reported at least one additional reason for dropout. This group did not differ from the rest of the sample who dropped out on the determinants of treatment seeking, except that they had slightly less negative beliefs about treatment, $t(55) = 2.56, p < .05$.

Correlates of Dropout

The associations between demographic variables, determinants of treatment-seeking, mental health symptoms, and reported treatment dropout were examined in a series of univariate logistic regressions. These results are summarized in Table 3. Results indicated that demographic variables and alcohol problems were not associated with treatment dropout. The relationship between PTSD symptoms and dropout approached significance ($OR = 1.02, p = .045$); however, the OR confidence interval included 1.00, indicating a nonsignificant relationship. Depression symptoms were positively associated with treatment dropout ($OR = 1.07, p < .01$). Functional impairment was also associated with a higher likelihood of dropout ($OR = 1.49, p < .01$).

Regarding determinants of treatment-seeking, career stigma ($OR = 1.70, p < .01$), differential treatment stigma ($OR = 1.62, p < .01$), practical barriers ($OR = 1.76, p < .01$), negative beliefs about treatment ($OR = 1.98, p < .01$), and self-reliance ($OR = 1.78, p < .05$) were positively associated with reported dropout. Positive beliefs about treatment were negatively associated with reported dropout ($OR = .60, p < .05$). Social support for treatment seeking, negative beliefs about medications, and stigmatizing beliefs about others were not significantly related to treatment dropout. All significant correlates were entered into a final conditional forward logistic regression. Only functional impairment, self-reliance, and career stigma emerged as unique predictors. These results are displayed in Table 4.

Discussion

Consistent with prior literature (e.g., Hoge et al., 2014), we found that a substantial portion (22%) of soldiers reported dropping out of treatment before it was completed, and over half soldiers who reported seeking treatment attended less than eight sessions. Poor treatment retention poses a serious threat to soldiers' well-being and duty performance. The present study sought to better understand why soldiers drop out of treatment by examining reasons for treatment dropout as well as factors that are associated with the likelihood of dropout.

We found that the most commonly endorsed reasons for treatment dropout were related to preferences for self-reliance, work interference with treatment, difficulty getting appointments, and stigma concerns. These were among the top reasons described in the study of active duty soldiers by Hoge et al (2014). Thus our results strengthen the conclusions that practical and attitudinal barriers need to be addressed to encourage retention. Several concerns with treatment and providers were also endorsed in both samples, but the percentages were substantially higher in our sample as compared to Hoge et al. (2014). These concerns included the availability of appointments, the effectiveness of treatment, and concerns that the professional was not sufficiently caring. Some of these reasons may point to a need for providers to focus on promoting engagement in treatment, such as through seeking to build trusting relationships and emphasizing the utility of the skills they are learning. These overall findings underscore the potential benefit of educating soldiers about treatment effectiveness, as well as improving the flexibility and accessibility of services. Further, we note that our study included soldiers who reported a wide range of mental health concerns, whereas Hoge et al (2014) specifically examined soldiers with PTSD. Thus, soldiers with different diagnoses may also experience different barriers to treatment retention.

Many soldiers also reported that they felt their symptoms had improved and they did not need further treatment. Hoge et al. (2014) also reported this as a common reason for dropout, although at a somewhat lower rate than our sample. While it may be that soldiers endorsing this response felt their symptoms were improved, it still raises concern because the soldier reported stopping treatment “before it was complete”. Thus the provider may have had alternative recommendations for the soldiers who endorsed this reason; however, this cannot be verified. We do, however, provide evidence that a non-trivial number of those soldiers who reported “getting better” still reported current symptoms that met study criteria. Although we cannot draw firm conclusions with the present data, we propose that these individuals may still have received insufficient treatment and that this particular reason merits further attention in research.

We found stigma perceptions, practical barriers, beliefs about treatment, and self-reliance were related to likelihood of dropout. These factors have also been related to reports of treatment-seeking in military samples (e.g., Britt, 2008; 2015; Hoge et al., 2004, Kim et al., 2011), and extend the previously reported results of different types of stigma as correlates of reported treatment dropout (Britt et al., 2015a). Our study established that additional determinants of treatment-seeking, beyond stigma, merit organizational attention because of their relevance throughout the treatment-seeking and retention process.

Given their unique association with reported treatment dropout, career concerns and self-reliance should be primary targets of interventions designed to facilitate retention. For example, it may be important to educate soldiers on realistic outcomes of seeking treatment. Soldiers should be aware of the realistic consequences of seeking treatment for one’s career and be provided with comparative information of how untreated symptoms could result in significant interference with work performance and potentially career harm. In addition, unit leaders should

be more informed on realistic career concerns associated with seeking treatment. For example, command should consider that although it may seem detrimental that a soldier is missing time at work to seek treatment, it might become far more detrimental to the unit if their symptoms worsen from not seeking treatment. Further, soldiers may benefit from information on indicators of when a problem merits professional help rather than handling a problem oneself. Such information may be particularly important for those soldiers who may feel they have improved enough to discontinue treatment, but may still be experiencing symptoms.

In addition, we found that functional impairment, as well as symptoms of depression, were positively associated with reported treatment dropout. Particularly, functional impairment was uniquely associated with reported dropout. This relationship is opposite to prior findings by Erbes et al (2009), where depression symptoms were associated with a decrease in dropout likelihood in a sample of OEF/OIF veterans. It is possible that veterans may have less interference than active duty soldiers (e.g., from occupational demands) to remaining in treatment when problems are severe.

Specifically, the relationship between functional impairment and reported dropout can be explained in several ways. First, studies have shown that perceptions of stigma and practical barriers are heightened when soldiers experience a mental health problem (Hoge et al., 2004), and it is possible that these barriers contribute to premature treatment termination. Second, impairment may make it more difficult to attend regular sessions and in an active duty military setting this may require courage (Pury, Britt, Zinzow, & Raymond, 2014). Thus, it may be that the psychological resources required for continuing treatment can also be impaired, leading to dropout. Third, it may be that those reporting higher levels of impairment are more impaired precisely because they have terminated a treatment that otherwise would have improved their

functioning. Finally, individuals who are not experiencing relief from their treatment may be both more likely to drop out and to report more impairment.

The present study had several limitations that highlight directions for future research. First, although we were able to differentiate those who had dropped out of treatment from those who had not, our data was cross-sectional; thus firm inferences about causality cannot be drawn. Future longitudinal research is needed to further determine what factors influence decisions to drop out of treatment. Researchers could also follow up with soldiers who drop out of treatment to better understand the consequences of not remaining in treatment and factors that may encourage a soldier to engage in treatment again. Second, all of the data examined in the present study was self-report and is subject to concerns associated with accurate reporting. Soldiers were assured that their responses were anonymous in order to encourage honest reporting; however, future studies are encouraged to utilize more objective data on treatment attendance and dropout, such as from mental health providers. Third, we were unable to examine differences between different types of treatment or treatment providers due to the small sample size. Future studies should consider how reasons for dropout might vary based on treatment types. Lastly, the soldiers in our study were in the unique context of pre-deployment processing. The anticipation of deployment could have impacted some responses. Therefore, it would be informative to conduct additional studies further in advance or following a deployment to determine whether responses remain consistent.

Our findings have important implications for military organizations, support organizations, and mental health providers in encouraging soldier retention and reducing mental health burdens. These organizations should be devoted to these efforts, not only for the soldier's well-being, but also for the functioning of the organization. Psychological stress and mental

health problems can be associated with large organizational costs in health care and employee productivity (Hilton, Scuffham, Vecchio, & Whiteford, 2010; Goetzel, Ozminkowski, Sederer & Mark, 2002). However, when employees complete treatment, the improvements in productivity likely offset the employer treatment costs (Goetzel et al., 2002).

Obstacles such as negative views of treatment and self-reliance may be alleviated by educational interventions. Our findings suggest that such interventions should focus on the dangers of inappropriate self-reliance to cope with mental health problems when a problem cannot be handled oneself. Interventions can also re-frame seeking treatment as a way to be a stronger soldier, where seeking help is not a sign of weakness but an effort to increase mental fitness. Providers may also need to better educate soldiers on treatment effectiveness and what to expect in treatment, so that more accurate expectations may encourage soldiers to remain in treatment. Finally, increasing treatment flexibility, employing multiple treatment modalities, and offering efficacious short-term interventions could reduce practical barriers to treatment (Zinzow, Britt, McFadden, Burnette, & Gillispie, 2012).

Specific recommendations in the context of the military could be providing more information on the treatment options that meet soldier needs. For example, some soldiers may not be aware of online resources that could be more compatible with work schedules. In addition, in-person sources of treatment should be made more accessible, either through alterations of soldier work schedules or extended hours at mental health clinics. Lastly, larger-scale organizational changes, such as revising policies that may discriminate against service members with mental health diagnoses (e.g., Acosta et al., 2014), may be necessary to promote a culture of acceptance toward those experiencing mental health concerns and those seeking treatment.

Conclusions

The results of the present study demonstrated that a substantial number of soldiers who seek treatment for a mental health problem report dropping out of treatment before it is complete. Factors such as a preference to take care of the problem oneself, concerns about stigma and career harm, and the degree of impairment a soldier was experiencing were all related to whether or not soldiers reported dropping out of treatment. The study highlights the importance of educating soldiers on when treatment is necessary to cope with mental health concerns and the need for organizational interventions to remove practical barriers to care.

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Table 1. Types of treatment received and providers of treatment.

	Dropped out ($N = 57$)		Did NOT drop out ($N = 146$)	
	<i>N</i>	Percent	<i>N</i>	Percent
<i>Type of Treatment</i>				
Individual therapy or counseling	44	77	100	69
Assessment/testing session	17	30	56	39
Medication for a problem	17	30	50	34
Group therapy	5	9	21	14
Marital or family therapy	15	27	33	23
Alcohol/substance abuse treatment	4	7	22	15
Inpatient hospitalization	1	2	7	5
Telehealth	2	4	10	7
Internet-based therapy	2	4	7	5
Alternative or holistic medicine	--	--	8	5
Vocational rehabilitation	--	--	8	5
<i>Type of Provider</i>				
On-base mental health provider	44	77	99	67
Civilian mental health provider	6	11	24	17
Primary care doctor (military)	4	7	20	14
Primary care (civilian)	1	2	5	4
Chaplain or spiritual advisor	12	22	41	29

Table 2. Descriptive statistics for reasons for dropout ($N = 57$).

Reasons for Dropout	<i>N</i>	Percent
Too busy with work	37	65
Felt like you could take care of problems on your own	35	61
Appointments not available or too far apart	33	58
Got better and didn't need treatment	30	53
Stigma (concerned that unit members or leaders might treat you differently or lose confidence in you)	27	47
Treatment didn't seem to be working	26	46
Did not fit with work schedule	25	44
Didn't feel that the mental health professional was sufficiently caring	23	40
Didn't feel comfortable with the mental health professional	22	38
Did not like the way the mental health professional communicated	18	32
Did not have sufficient time with the mental health professional	18	32
Mental health professional moved/you PCS'd	18	32
Didn't want others to have to cover for my work/responsibilities	17	30
Didn't feel that the mental health professional was competent	14	25
Did not like the treatment option of medication offered by the mental health professional	14	25
Worried that the mental health treatment would not be kept confidential from your unit leaders	14	25
It took too much of my time	14	25
Not enough staff/resources at the clinic to provide me with adequate	14	25

CORRELATES OF DROPOUT 28

treatment		
Felt judged or misunderstood by the mental health professional	13	23
The type of treatment did not match my expectations for the type of treatment I should receive	13	23
Leaders or other unit members viewed or treated me differently	13	23
It made me feel like a weak person	13	23
Transportation not available	12	21
Leadership did not support me going to treatment	11	19
Did not like the treatment option of talk therapy offered by the mental health professional	10	17
Mental health professional was not reliable	9	16
It made me feel worse	8	14

Table 3. Univariate correlates of mental health treatment dropout.

Variable	B	Wald	Odds Ratio	Confidence Interval
<i>Demographics</i>				
Female	-.50	.74	0.61	0.19—1.90
<i>Age</i>				
18-24	--	--	--	--
25-29	.35	.98	0.88	0.71—2.87
30 or older	-.13	.10	0.36	0.38—2.00
Married	.31	.17	1.36	0.32—5.89
<i>Race/Ethnicity</i>				
White	--	--	--	--
Black	-.22	.19	0.80	0.29—2.15
Hispanic	.71	2.19	2.04	0.80—5.21
Other	.79	2.64	2.20	0.85—5.71
College degree	-.63	1.47	0.53	0.19—1.48
Military tenure	-.02	.60	0.98	0.93—1.03
<i>Mental health symptoms</i>				
PTSD symptoms	.02	3.97	1.02	1.00—1.04
Depression symptoms	.07**	7.73	1.07	1.02—1.12
Alcohol problem	.64	2.44	1.89	0.85—4.20
Functional impairment	.40**	8.99	1.49	1.15—1.94
<i>Determinants of treatment seeking</i>				

CORRELATES OF DROPOUT 30

Career stigma	.53**	9.31	1.70	1.21—2.40
Differential treatment stigma	.48**	8.66	1.62	1.18—2.23
Social support for treatment seeking	-.25	1.68	0.78	0.53—1.14
Practical barriers	.57**	7.65	1.76	1.18—2.63
Positive beliefs about treatment	-.51*	4.02	0.60	0.36—0.99
Negative beliefs about treatment	.68**	7.71	1.98	1.22—3.20
Negative beliefs about medications	.38	3.10	1.47	0.96—2.25
Self-reliance	.58*	6.37	1.78	1.14—2.78
Stigmatizing beliefs about others	.44	3.30	1.55	.97—2.47

Note. *N* range = 161-203. The results presented are those with each variable entered independently into a univariate logistic regression as predictors of treatment dropout.

* $p < .05$; ** $p < .01$.

Table 4. Conditional forward logistic regression with significant univariate correlates of dropout.

Variable	B	Wald	Odds Ratio	Confidence Interval
Functional impairment	.37*	6.34	1.45	1.09—1.93
Career stigma	.38*	3.88	1.46	1.00—2.12
Self-reliance	.57*	5.08	1.77	1.08—2.90

Note. $N = 195$.

* $p < .05$.