ABSTRACT  Objective: This study examined soldier attitudes about postdeployment mental health screening, treatment, barriers to care, strategies for overcoming barriers, and settings, personnel and timing for conducting postdeployment mental health screening. Methods: Deploying soldiers participated in a voluntary anonymous survey. Results: Of 3,294 soldiers, 2,678 (81.3%) responded to the survey. When the three most endorsed perceived barriers to mental health care (negative perception by unit members, negative perception by leaders, and being viewed as weak) were examined, ~15% fewer soldiers endorsed the perceptions, compared with a previous study conducted at the beginning of the war. Receipt of training focused on managing psychological problems associated with increased agreement to seek treatment. Participants endorsed surveys, interviews, and unit providers as preferred instruments and providers for postdeployment screening. Soldiers endorsed encouragement from family members and friends as the preferred approach to reducing barriers to mental health care. Conclusion: Extensive educational programs seemed to have reduced the stigma related to receiving mental health care. Programs that focus on friend and family member encouragement of soldiers to seek mental health assistance should continue. Postdeployment screening should be conducted under conditions in which soldiers are most likely to report problems honestly.

INTRODUCTION
Postdeployment psychological screening has been growing in importance since Operation Desert Storm and it became mandatory in 1997. The U.S. Army implemented the postdeployment health assessment (PDHA), which screens soldiers upon return from deployment, in an effort to identify medical and mental health problems sooner and possibly decrease the stigma associated with seeking and receiving mental health care.

Few studies have attempted to validate the postdeployment screening instrument against other measures or mental health screening tools to determine its effectiveness. Furthermore, rates of reported deployment-related symptoms may increase with time after return from deployment. These findings led to an extension of the existing PDHA program to include reevaluation at 3 to 6 months after return from a combat zone, in a process called postdeployment health reassessment (PDHRA).

The postdeployment screening tools have become standardized, with utilization of a survey and a face-to-face interview with a medical provider (physician or physician assistant) to review the answers. However, details of the implementation of the screening process have varied between units. Implementation methods have included performing the initial PDHA screening before departure from the combat zone, performing PDHRA screening upon return to the home station, and having all returning soldiers undergo a full mental health evaluation. Other proposed methods for implementation include the utilization of enlisted mental health specialists and civilian providers. Most reports of the effectiveness of one approach versus others have been drawn from anecdotal evidence and, to date, no published study has examined soldier preferences for screening upon return from combat.

An earlier study noted that soldiers and marines endorsed multiple barriers to seeking mental health care, despite their personal recognition that they were experiencing problems. The authors found that those with significant symptoms were less likely to report an interest in seeking mental health care and were two to three times more prone to report concerns about career impact or altered professional relationships with coworkers or supervisors. In response to those findings, the Army implemented “Battlemind training,” a series of programs based on teaching soldiers and their families to mentally prepare for deployments, combat operations, and the transition home from deployment. The program was created with the purpose of decreasing the stigma of seeking mental health care and encouraging soldiers to obtain assistance. The effectiveness of this new program is not known at this time, and it is not clear whether the protracted nature of the war, media coverage, and congressional interest in postdeployment mental health issues have had an impact on attitudes toward seeking care.

This article presents findings of a process-improvement project that polled soldiers before deployment on their preferences regarding the timing and process of conducting postdeployment mental health screening. The goal of this commander-

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directed project was to determine the best method for identifying soldiers in need of mental health care upon return from a 15-month deployment to Iraq. The aim was to determine when and how soldiers would most honestly endorse their mental health issues and to determine what factors influenced their responses. Attitudes toward seeking care, possible interventions for enhancing care-seeking behavior, and characteristics of those who would seek care were also examined.

METHODS

Screening Process
Approval was obtained from the division and brigade commanders as well as the institutional review board, and the survey was distributed to all of the soldiers of one deploying brigade combat team during predeployment briefings. Medical personnel briefed the soldiers on deployment-related medical threats and introduced the soldiers to the various screenings they would be completing during the predeployment medical evaluation process, including a process-improvement survey that was voluntary and anonymous. The groups were informed that there would be no negative consequences of nonparticipation. Those who chose not to participate turned in a blank survey form, which prevented them from being identified as nonparticipants. Upon completion, the survey forms were dropped into a box and sealed until data entry. After completion of the survey, the soldiers received their predeployment Battlemind training.

Content of the Survey
The survey was divided into four parts. With the exception of the demographic section, all questions were based on a 5-point Likert scale, in which soldiers were asked to select the level to which they disagreed or agreed with a statement or personal attitude. The responses ranged from 1 (strongly disagree) to 5 (strongly agree). Higher scores represented greater agreement with the statement or personal attitude; a score of 3 represented a neutral attitude toward the statement or attitude.

Demographic Information
Soldiers were asked to provide basic demographic information, including age, gender, rank, number of deployments completed, highest level of education, history of completing postdeployment Battlemind training, and history of mental health treatment. Choices for the history of Battlemind training were "yes," "no," and "don't remember." For analysis, the no and don't remember responses were combined and compared with yes responses. Choices for history of mental health treatment included "no," "yes, within 1 year before joining the military," "yes, but it was completed more than 1 year before joining the military," "yes, before any deployment," and "yes, after deployment."

Postdeployment Screening Preferences
Soldiers were presented with lists of postdeployment screening options, including timing and modalities of screening and personnel to conduct the screening. For each condition of screening, the soldier was asked whether he or she felt comfortable honestly reporting ongoing mental health problems in that setting. Timing options included before departure from the combat zone, within the first 48 hours home, within the first 2 weeks home, and 3 to 6 months after deployment. Modalities included a survey, a face-to-face interview, and a full mental health evaluation. Screening personnel choices included the unit physician/physician assistant, a nonunit military duty physician/physician assistant, a civilian physician/physician assistant, a unit mental health officer, a unit enlisted mental health specialist, an active duty mental health officer, an active duty mental health specialist, and a civilian mental health provider.

Care-Seeking Attitudes
Soldiers were asked to rank their attitudes toward treatment for mental health issues by using a single statement, "If screening results indicated or I believe that I have an ongoing mental health issue, I will seek treatment." Soldiers who agreed or strongly agreed were compared with those who were neutral or disagreed with the statement. In addition, soldiers were provided with a list of locations and asked whether they felt comfortable seeking mental health care at the division mental health clinic, hospital mental health clinic, TRICARE civilian mental health provider (records kept and in the medical record), or Military One Source provider (no records kept and no data placed in the medical record but no long-term care available).

Barriers to Care and Care-Seeking Enhancement Strategies
Soldiers were asked about eight different perceived barriers to care. Those used included the six largest barriers identified by Hoge et al. and were worded exactly as they were in that study. The barriers included "My unit leadership might have less confidence in me," "Members of my unit might view me differently," "It is difficult to get time off from work to attend appointments," "It would harm my career," "It would be too embarrassing," and "I would be seen as weak." Two additional statements were added, "Evidence of mental health care in my medical records could harm my career" and "I wouldn't agree to take any medications for mental health problems." The eight responses were averaged to create an agreement index that captured the degree of agreement or disagreement with the questions (scale range, 1–5; mean, 2.70; SD, 0.90; 1 represents strong disagreement, 3 represents a neutral attitude, and 5 represents strong agreement concerning the barriers; Cronbach's α = 0.942). This scale captured not only agreement or disagreement with each statement but also the magnitude of the responses across all questions (e.g., agree versus strongly agree). Soldiers with scores of >3 (agreement or strong agreement) were classified as having agreement with the barriers and were compared with soldiers with scores of <3 (neutral or disagreement).
In addition, soldiers were asked about seven options that provided potential methods to overcome those barriers. The questions asked whether soldiers would be more prone to seek mental health care if "my friends and family strongly encourage me to do it," "senior unit leaders send out messages that seeking care would not harm careers," "direct supervisors remind me that it is important to seek care," "I am guaranteed to get time off to get care without negative consequences from my unit," "I could get care after hours so that my unit would not know about it," "I receive additional education from programs like Battlemind to help me know if I really have a problem," and "I was certain that my command would not be able to find out the details of my problem." The seven responses were averaged to create an agreement index (scale range, 1–5; mean, 3.49; SD, 0.72; 1 represents strong disagreement, 3 represents a neutral attitude, and 5 represents strong agreement concerning the approaches to overcome barriers; Cronbach's α = 0.912). Soldiers with scores of >3 were classified as having overall acceptance of encouragement and were compared with soldiers with scores of <3 (neutral or negative).

### Analyses

The primary outcome variable of interest in the regression models was the question of whether soldiers would seek treatment in response to screening results or personal belief that they were experiencing a problem. Secondary outcome measures were beliefs regarding the barriers to care and attitudes toward acceptance of treatment encouragement strategies. Age (<25 years versus ≥25 years), gender, rank, previous Operation Iraqi Freedom/Operation Enduring Freedom deployments completed (any versus none), highest level of education, and history of completing Battlemind training (yes versus no or don't remember) were entered into logistic regression models to determine associations with (1) a positive attitude toward seeking treatment, (2) belief in the barriers, and (3) acceptance of encouragement. Other analyses included χ² comparisons of the response patterns of previously deployed versus nondeployed soldiers and comparisons between the responses of this soldier sample and those of a similar soldier sample obtained after their return from deployment during the early stages of the war in Iraq. All analyses were performed by using SPSS 12.02 (SPSS, Chicago, Illinois).

### RESULTS

Of the 3,294 service members approached, 81.3% (N = 2,678) voluntarily chose to participate. The population was predominantly male (n = 2,504; 93.5%) and enlisted (n = 2,526; 94.4%) and had a high school equivalent or lower education (n = 1,530; 57.1%). Full demographic data are outlined in Table 1.

Nearly one quarter (n = 649; 24.1%) of the soldiers reported that they had received some form of mental health treatment, with 7.2% (n = 193) receiving care before entering...
the Army, 5.7% \((n = 153)\) receiving care before any deployment, and 11.2% \((n = 300)\) receiving care after a deployment. Of those who had previously deployed, one of every five soldiers \((20.7\%)\) had sought care upon their return. Furthermore, 84.8% \((n = 2,270)\) indicated that they had been through Battlemind training.

Table II summarizes the findings on the soldiers’ attitudes toward postdeployment screening method, timing, and personnel, as well as their preferred location for obtaining mental health care. Not shown in Table II is that 85.2% \((n = 1,010)\) of those who reported that they would report honestly in a full mental health evaluation also agreed that they would report honestly in both a survey and a face-to-face interview and 97.8% \((n = 1,160)\) who endorsed the full mental health evaluation also agreed with either the survey or a face-to-face interview.

Approximately two-thirds \((65.7\%; n = 1,760)\) of the responding soldiers indicated that they would be willing to address a mental health condition if they thought they had an issue or if the postdeployment screening identified an ongoing problem, whereas 6.4% \((n = 167)\) reported that they would not seek assistance. The remainder of soldiers reported a neutral attitude or did not respond to the question.

Table III outlines some of the commonly identified barriers to seeking mental health care in the military. It compares both the overall sample and those with and without deployment experience with previously reported levels of stigma within the military environment. Of note, the comparison data from the study by Hoge et al. were calculated by summing the positive responses for their participants. The values listed are the percentages of positive responses and were determined by summing the positive responses for their participants, as well as their preferred location for obtaining mental health care. Not asked in the survey by Hoge et al.,

### TABLE III. Barriers to Care

<table>
<thead>
<tr>
<th>Perceived Barrier</th>
<th>Proportion (% ((n)))</th>
<th>Proportion (% ((n)))</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All Participants ((N = 2,678))</td>
<td>All Participants in Study by Hoge et al. ((N = 6,153))</td>
</tr>
<tr>
<td>Members of my unit might have less confidence in me</td>
<td>20.8 (558)</td>
<td>34.2</td>
</tr>
<tr>
<td>My unit leadership might treat me differently</td>
<td>22.4 (601)</td>
<td>36.5</td>
</tr>
<tr>
<td>There would be difficulty getting time off from work for treatment</td>
<td>21.8 (583)</td>
<td>26.3</td>
</tr>
<tr>
<td>It would harm my career</td>
<td>18.5 (495)</td>
<td>27.0</td>
</tr>
<tr>
<td>It would be too embarrassing</td>
<td>14.6 (392)</td>
<td>20.6</td>
</tr>
<tr>
<td>I would be seen as weak</td>
<td>17.8 (477)</td>
<td>35.4</td>
</tr>
<tr>
<td>Evidence of mental health care in my medical records could harm my career</td>
<td>20.9 (560)</td>
<td>24.3 (249)</td>
</tr>
</tbody>
</table>

Six individuals did not identify their deployment history and were excluded from the deployment distribution. Respondents were asked to rate each of the possible concerns that might affect their decision to receive mental health services. The five possible responses ranged from strongly disagree to strongly agree, with agree and strongly agree being combined as positive responses. The comparison data were from the study by Hoge et al. on barriers to care. The values listed are the percentages of positive responses and were determined by summing the positive responses for their participants who did not screen positive for a mental health disorder and those who did.

\(^a\) \(p \leq 0.01\).

\(^b\) \(p \leq 0.05\).

\(^*\) Not asked in the survey by Hoge et al.
Attitudes Toward Mental Health Screening

TABLE IV. Strategies for Overcoming Barriers to Care

<table>
<thead>
<tr>
<th>Strategy for Overcoming Barriers</th>
<th>All Participants (N = 2,678)</th>
<th>Participants Who Had Previously Deployed (N = 1,446)</th>
<th>Participants Who Had Not Previously Deployed (N = 1,226)</th>
<th>χ² (df = 1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>My friends and family strongly encourage me to do it</td>
<td>57.8 (1,549)</td>
<td>61.4 (888)</td>
<td>53.5 (656)</td>
<td>0.94</td>
</tr>
<tr>
<td>Senior unit leaders send out messages that seeking care would not harm careers</td>
<td>46.0 (1,231)</td>
<td>49.2 (711)</td>
<td>42.1 (516)</td>
<td>4.52*</td>
</tr>
<tr>
<td>Direct supervisors remind me that it is important to seek care</td>
<td>47.1 (1,262)</td>
<td>49.7 (718)</td>
<td>44.2 (542)</td>
<td>9.66*</td>
</tr>
<tr>
<td>I am guaranteed to get time off to get care without negative consequences from my unit</td>
<td>51.6 (1,383)</td>
<td>54.6 (789)</td>
<td>48.0 (589)</td>
<td>0.18</td>
</tr>
<tr>
<td>I could get care after hours so that my unit would not know about it</td>
<td>39.5 (1,058)</td>
<td>42.6 (616)</td>
<td>35.8 (439)</td>
<td>4.81*</td>
</tr>
<tr>
<td>I receive additional education from programs like Battlemind to help me know if I really have a problem</td>
<td>41.2 (1,104)</td>
<td>45.5 (658)</td>
<td>36.2 (444)</td>
<td>5.12*</td>
</tr>
<tr>
<td>I was certain that my command would not be able to find out the details of my problems</td>
<td>39.8 (1,067)</td>
<td>43.2 (624)</td>
<td>35.9 (440)</td>
<td>0.45</td>
</tr>
</tbody>
</table>

Six individuals did not identify their deployment history and were excluded from the deployment distribution. Respondents were asked to rate each of the possible strategies for overcoming perceived barriers to care for mental health services. The five possible responses ranged from strongly disagree to strongly agree, with agree and strongly agree being combined as positive responses.

* p ≤ 0.05.

DISCUSSION

Screening Methods

A greater proportion of soldiers endorsed agreement with either the survey or face-to-face interview methods, compared with the full mental health evaluation. This suggests that these methods, when used with both the Army PDHA for returning soldiers and the PDHRA for soldiers who have been home for 90 to 180 days, may be more likely to be successful in obtaining accurate responses from soldiers. Some have suggested using full mental health evaluations for all returning soldiers. This approach has been successful at institutions where additional external mental health resources are available beyond those required to complete the current approach with a questionnaire followed by face-to-face interviews to identify the small proportion of soldiers needing a mental health referral. Wide-ranging mental health assessment programs can be costly and may affect other resource utilization, such as access to care. The reported soldier attitudes suggest that full mental health evaluations may not be as desirable as other methods. Few soldiers who endorsed honest reporting in a full mental health screening did not also endorse honest reporting with survey or face-to-face methods, which indicates that there may be little additional value in using mental health resources in such a fashion.

Current policy for screening throughout the deployment cycle allows for initial postdeployment screening to be completed either in theater or upon return to the home station. The postdeployment reassessment is then completed 90 to 180 days after return from deployment. There were minimal differences in the proportions of soldiers who indicated that they were likely to answer the screening questions truthfully before return from deployment, during the first 2 weeks after return, or during the PDHRA time frame of 90 to 180 days after return. Soldiers clearly indicated that they were less likely to answer the PDHA honestly during their first 48 hours home. This likely represents a desire to be with their families upon their return, rather than answering screening questions, with the perceived risk of delays if they answer positively.

Soldiers reported that they were most likely to respond truthfully to screening by both physicians and mental health personnel from within their unit, with the highest level of confidence being in the unit mental health provider. This likely represents a willingness to talk with someone who has shared their experiences and understands the nature of their deployment. In addition, this individual would be one of the providers who had been caring for them and conducting debriefings throughout the deployment. The next group of
providers with whom the soldiers were most apt to respond truthfully was the unit medical providers and military mental health providers from other units. The soldiers showed the least preference for civilians or other military physicians from outside their unit. This again suggests that soldiers are interested in talking to individuals who can understand what the soldiers experienced during deployment.

Current policy for screening throughout the deployment cycles outlines the intention of using the postdeployment screening to identify soldiers with health problems who are at risk during and after redeployment. A recent article outlined one method to meet this goal by using initial postdeployment screening and subsequent mental health consultation as a method for stratifying risk levels for soldiers and providing education and resource information during the redeployment process to ensure that those most in need have access to care. Completion of screening in theater with unit personnel, with a review of the answers during the first 2 weeks at home conducted by nonunit military personnel, provides for early identification of problems and best matches soldier preferences for the screening process. A risk-stratification process may also be beneficial in reducing stigma, because, among the soldiers who screened positive in the initial screening, only a small proportion were identified as needing emergency mental health care. Initial in-theater screening optimizes the timing and personnel to whom soldiers report they are most likely to respond truthfully, allows for risk stratification of returning soldiers, and optimizes the use of available resources. Review of screening results during the 2 weeks after return with other military medical/mental health providers would also allow the returning providers from the units to participate in the decompression and reintegration process.

**Barriers**

All of the barriers were significantly decreased from the 2004 study by Hoge et al. This is a positive sign and suggests that efforts by both military leadership and the military medical system are having a positive impact on reducing those barriers. The greatest decrease was found to be in the perception that a soldier “would be seen as weak,” likely because of multiple military outreach and education programs for both soldiers and leaders, emphasizing seeking help as a sign of strength. The least amount of decrease was found in “difficulty getting time off from work.” This is not unexpected, because the unit surveyed for this project was part of the “surge” of troops in the spring of 2007; it is not surprising that many cited difficulty getting time off from work for treatment, because many had just gone through 2 to 3 months of condensed predeployment training for an early deployment.

Outside the work restrictions, two of the largest identified barriers were concerns that the “unit leadership might treat me (the soldier) differently” and “members of my unit might have less confidence in me.” These were also two of the largest barriers identified by Hoge et al. Despite a decrease of 14 percentage points in the rate of agreement with this belief, this represents a continued concern of many soldiers, that their leaders, peers, and subordinates may perceive that they are not capable of handling their responsibilities if they seek mental health care. Additional studies are required to determine the factors that influence this mindset.

The most influential factors for overcoming barriers were identified as having “family and friends strongly encourage” soldiers to get help and creating programs and systems that allow soldiers “guaranteed time off to get care without negative consequence from the unit.” In contrast, the least likely methods were guarantees that the soldier’s “command would not be able to find out the details of” the problems or that soldiers have availability of “after-hours” clinics. Additional training and family education could therefore enhance the probability that soldiers with problems would seek care. This approach has been initiated in part through the Army’s multiple programs in which soldiers and families are educated about the signs and symptoms of postdeployment mental health problems and are encouraged to help their friends and family members get assistance. The responses of soldiers to this survey suggest that future initiatives that target these groups may be the most successful in overcoming the currently defined barriers.

In addition, unit commanders should be encouraged, during the first 3 to 6 months home from deployment, to encourage their soldiers to seek help for mental health problems with an assurance of no career-harming consequences and should ensure that soldiers are afforded time during the workday to obtain care. The initial 3 to 6 months home from a deployment are dedicated to reconstitution and resetting for future deployments. It is a time when units are refitting their vehicles and upgrading equipment. It is imperative that commanders ensure that they also encourage their soldiers to “reset” and be ready for the future demands of the unit. This type of shift in attitude allows for viewing mental health care as a force multiplier, rather than a stigmatizing event, and can have positive long-term effects for both the soldier and the unit.

**Willingness to Seek Care**

Encouragingly, nearly two-thirds of the soldiers reported that they would seek mental health care if they thought they had a problem. However, this still leaves a large group of soldiers who are unwilling to seek care for problems. On the basis of the responses of the soldiers surveyed in this project, receipt of Battlemind training seems to be having a positive impact. Soldiers who had received this training were more apt to seek assistance and were less likely to agree that barriers to seeking care exist. These findings support the recommendations of the recent Mental Health Assessment Team IV report to continue implementation of the Battlemind program.

In our sample, soldiers who had deployed were less likely to seek assistance than were those who had not deployed. It is unclear whether deployment issues are responsible for this difference or whether nondeployment factors play a more significant role. Potential factors could be previous negative
experience with mental health care and increased perceptions of stigma among higher-ranking individuals, because most of the nondeployers are junior-ranking soldiers. It is also possible that those who had previously deployed noted significant symptoms upon initial return home but experienced abatement of symptoms over time without the need for formal care. Additional studies are required to identify whether and to what extent repeat deployments are decreasing soldiers' need or willingness to seek mental health care.

**Limitations**

This study was limited in that it was a cross-sectional, self-report survey of a convenience sample of one deploying brigade combat team. However, the demographic distribution closely matched that of other deploying units and the survey was conducted anonymously to maximize honesty in responding to the questions. Soldier attitudes reported before deployment may not match attitudes or behaviors after deployment. Although most of the barrier questions had been used previously, there are no known psychometric properties regarding their relationship to actual behaviors.

**CONCLUSIONS**

Perceived barriers to care have decreased, but continued efforts are needed to further reduce such perceptions. It seems that programs such as Battlemind are beneficial and programs that educate and encourage friends and family members to identify and to encourage soldiers to seek care also are needed. Further study is required for better understanding of the factors associated with previously deployed soldiers reporting less willingness to seek treatment and for development of programs to address those attitudes.

Postdeployment mental health screening continues to be a critical tool for early identification of deployment-related mental health conditions. When planning for postdeployment screening, consideration should be given to the conditions in which soldiers are most willing to honestly report symptoms or concerns. At present, it seems the optimal approach would be to enhance mental health assets at the division and brigade levels, rather than contracting for civilian mental health providers.

**ACKNOWLEDGMENT**

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