

Acceptability of Adverse Childhood Experiences Questions for Health Surveillance in U.S. Armed Forces

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ABSTRACT Background: Research has documented a consistent and strong association between adverse childhood experiences (ACE) and negative health outcomes in adulthood. The Department of Defense is expanding health surveillance of military members and considering the inclusion of ACE questions. Objective: To explore the perceptions and attitudes of service members and spouses regarding the use of ACE questions in routine health surveillance. Method: Forty-one active duty service members and spouses were interviewed at two Army troop medical centers. Semistructured qualitative interviews were used to examine their views regarding the use of ACE questions in military health surveillance. Results: Participants believe there is value in health surveillance; however, they are cautious about providing ACE or other information that may be perceived negatively, without confidentiality reassurances. Conclusion: Successful employment of ACE questions in active duty military health surveillance will depend on the ability of military health officials to ensure confidentiality and to communicate the relevance of ACE to health status.

INTRODUCTION

There has been an increasing recognition and interest in the use of active health surveillance in the U.S. military since the 1991 Persian Gulf War, and there has been wide interest and cautious enthusiasm in extending these efforts to adverse childhood experiences (ACE) and broader mental health domains. The 2005 National Defense Authorization Act (Section 733, Baseline Health Data Collection Program) mandated that the Department of Defense implement a baseline health assessment to improve health surveillance, facilitate understanding of how military-related stress and environmental exposures affect future health, and contribute to a system that supports early intervention and prevention programs among service members throughout their careers¹. For the purpose of this article, we define military health surveillance as the routine systematic collection, analysis, interpretation, and reporting of population-based data in an effort to characterize and counter threats to the military population's health, well-being, and performance. If properly implemented, such surveillance efforts promise to offer key advantages such as the ability to monitor the overall health of service members and to identify emerging medical concerns,

thereby allowing for the development of programs and strategies to address emerging health issues.

Prevalence of Adverse Childhood Experiences (ACE)

ACE are commonly reported among military personnel, and are relevant health surveillance considerations, even if they are not regularly and systematically assessed. Rosen and colleague^{2,3} found that the prevalence of childhood physical and sexual abuse in Army recruits was 56% for males and 66% for females. A study of incoming Navy recruits found that 57% of female incoming Navy recruits reported childhood physical or sexual abuse.⁴ The same investigators examined childhood exposure to domestic violence as well as childhood physical and sexual abuse among incoming Navy recruits and found 51% of men and 61% of women reported one or more of these ACE.^{5,6}

In a community population, the Centers for Disease Control (CDC) ACE Study examined the impact of seven categories of childhood traumatic stress—which included sexual, physical, or emotional abuse, neglect, witnessing domestic violence, living with a substance abuser or individual with a mental illness, or having a criminal in the household—on the health status of over 17,000 adult respondents seeking wellness-based care through a large Health Maintenance Organization.⁷ Prevalence estimates from this study for categories of childhood abuse, neglect, and household dysfunction are similar to other national estimates from retrospective reports. For example, a national survey of adults conducted by Finkelhor et al.⁸ determined that 16% of men and 27% of women had been sexually abused during childhood; in the ACE Study cohort, 16% of men and 25% of women in the sample had experienced childhood sexual abuse. The ACE Study reported that 30% of the men had been physically abused as

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This manuscript was received for review in July 2007. The revised manuscript was accepted for publication in June 2008.

boys; this closely parallels the prevalence of 31% found in a population-based study of Canadian men.⁹ ACE tend to occur. The ACE Study found that participants reporting one type of ACE had a 90% likelihood of having also experienced a second type.¹⁰

Health Impact of ACE

Researchers have found strong and consistent associations between multiple interrelated ACE and increased likelihood of substance abuse,^{7,11-13} smoking-related illnesses,⁷ high-risk sexual behavior,^{7,14-16} suicide attempts,^{7,12,17} depression,^{18,19} and other leading causes of death.⁷

In the CDC studies,^{7,11-19} an ACE score was developed to examine the possible cumulative effects through a total count of these experiences. Using the ACE score, researchers have reported a dose-response relationship between ACE and negative health. For example, Felitti et al.⁷ reported that an individual reporting two, three, and four ACE was at two, five, and nine times greater risk, respectively, for a suicide attempt. Individuals reporting four or more ACE, compared to those reporting no ACE, had a 4- to 12-fold increase in risk for alcoholism, drug abuse, and depression; a 2- to 4-fold increase in smoking, poor self-rated health, and sexually transmitted disease; and a 1.4- to 1.6-fold increase in physical inactivity and severe obesity.⁷ The number of categories of ACE also showed a graded relationship to the presence of diseases including ischemic heart disease, cancer, chronic lung disease, skeletal fractures, and liver disease.⁷ Similar findings by Rodgers et al.²⁰ evidenced a graded relationship between the number of types of ACE and substance use and high-risk sexual behavior.

Unfortunately, direct comparisons of CDC and military findings may not be valid, because the CDC ACE Study assessed seven types of ACE while military studies assessed fewer ACE types, creating issues of possible category overlap. In addition, different questions and assessment methodologies were employed in the CDC ACE Study versus military studies. That said, studies of military personnel suggest that service members reporting ACE are at increased risk for negative health outcomes similar to those identified in the CDC ACE Study.^{4,21,22} Findings from longitudinal studies suggest that new military recruits who report childhood sexual abuse are significantly more likely to leave military service during basic training^{23,24} and during their first military enlistment (i.e., the first 4-year service tour) as compared to military recruits not reporting these ACE.⁵

Acceptability of Collecting ACE Data in the Military

It is clear that ACE are associated with a multitude of proximal and distal health consequences at the population level, but not at the individual level.²⁵ In Department of Defense (DoD) efforts to maximize force health protection and readiness,²⁶ ACE and mental health data collected as part of

routine military health surveillance may help to identify individuals with unmet needs and enable the development of targeted health care and community-based programs designed to meet those needs. However, as discussed in Rosen and Martin,² military participants were uncomfortable disclosing ACE information, even when confidentiality could be assured. It seems that the potential utility of asking such invasive questions as part of a thorough medical screening must be weighed against the possibility of untruthful responses and the discomfort the questions may cause to the respondent.

In 2005, Dr. William Winkenwerder, the Assistant Secretary of Defense for Health Affairs at that time, asked the Armed Forces Epidemiological Board to discuss and provide recommendations about assessing ACE as a population metric in the military. The board concluded that merely asking the questions about ACE could have deleterious effects, warned that health surveillance data may not be subject to the same confidentiality limitations as military medical records, and without a clearly defined use for the data, asking questions about ACE in a health surveillance context was not recommended.²⁵ However, conclusions from the board were based on expert consensus and a review of the literature, not on the opinions of those arguably most directly impacted by ACE questions: service members and their spouses.

Study Purpose

If ACE questions are viewed as sensitive or unacceptable by military respondents, the accuracy of reported information may be compromised. In an effort to understand the level of acceptance surrounding the use of ACE questions in military health surveillance, we explored how military personnel and their family members perceive (1) the general idea of military health surveillance programming; (2) the inclusion of mental health domains in military health surveillance; (3) the inclusion of ACE domains in military health surveillance; and (4) the implications of including ACE surveillance data in military medical records. The purpose of this study is to examine service members' and spouses' perceptions regarding the inclusion of ACE domains in active military health surveillance. A qualitative methodology was chosen using individual interviews to facilitate in-depth exploration of this relatively unexplored topic through open-ended interviews. This exploratory method, while independently informative, also lends itself to future quantitative survey research for the purpose of improving military health surveillance programs. A priori, we anticipated that themes related to confidentiality, career impact, and trust would arise. We also expected other themes would emerge; therefore, we used open-ended interview questions to identify previously unrecognized themes for future study.

METHODS

The goal of the data collection was to elicit, record, and examine the perceptions, attitudes, and beliefs of service

members and service members' spouses regarding issues related to the implementation of a new DoD-wide health surveillance program. Participants were recruited from the Womack Army Medical Center Family Medicine Clinic and Robinson Health Clinic at Fort Bragg, North Carolina in the course of patients' clinic visits. The Institutional Review Board at Womack Army Medical Center and Uniformed Services University reviewed and approved the research protocol and the informed consent document.

Study Procedure

The study used a purposive sampling method. Participants were recruited from primary care patient waiting areas. Recruitment criteria were based on time in service (i.e., greater or less than 5 years), gender, and military status (i.e., service member or spouse). Prospective participants were approached in the waiting room by a staff member who introduced the study and determined whether the individual was interested in participation. Individuals interested in the study were provided a packet containing an information sheet explaining the purpose of the study and an anonymous screener containing six ACE questions that they were instructed to complete and return. Individuals who positively endorsed one or more ACE item were asked to consent to an interview. The decision to conduct a purposive sample of only those individuals with self-reported ACE was made because these individuals are presumably most sensitive to and most affected by the implications of asking ACE questions in routine military health surveillance. However, to limit possible bias during the interviews, moderators were blinded to the interviewees' specific ACE.

Study Sample

A total of 784 individuals were provided screening questionnaires; 615 individuals completed the questionnaire, which represents a 78% response rate. Of the 615 individuals who completed the questionnaire, 342 (56%) individuals met inclusion criteria of reporting one or more ACE. Forty-one individuals agreed to participate in an additional interview. Anecdotally, the most common reasons provided for not participating in the study were related to lack of time (e.g., service members needed to return to duty immediately following their medical visit, or spouses had other urgent matters requiring their attention). Eligible individuals were comparable to ineligible individuals in gender (55% of females and 54.6% males were eligible; $\chi^2(1) = 0.01, p = 0.91$), age (mean age 27.9 eligible vs. 27 ineligible; $t = -0.13, p = 0.89$), race (54.9% Caucasian, 57.1% African American, 54.1% Other were eligible; $\chi^2(3) = 0.25, p = 0.88$), education level ($\chi^2(2) = 2.0, p = 0.36$), marital status (5.55% single, 54.2% married, 70.6% separated, and 55.6% divorced were eligible; $\chi^2(3) = 1.8, p = 0.62$), and military status (54.9% Army, 50% non-Army; $\chi^2(1) = 0.56, p = 0.45$). However, eligible individuals were significantly different with regard to rank. Officers were significantly less likely than en-

listed personnel or spouses to report an ACE (39.4% officers, 57% enlisted, 57.1% spouses; $\chi^2(2) = 7.38, p < 0.03$).

Interviewed participants included 16 male service members (8 with <5 years in service, 8 with >5 years in service), 12 female service members (7 with <5 years in service, 5 with >5 years), and 13 female spouses (7 whose spouse has <5 years in service, 6 whose spouse has >5 years). Perspectives regarding active ACE surveillance were anticipated to vary in important ways by gender and between junior, middle, and senior service members and spouses. Therefore, purposive efforts were made to enroll individuals from each of these groups.

Interviews

Audio-recorded interviews were conducted in a private office located within the health care facility where the participant was screened. Participants provided informed consent before participation in the individual interviews. Interviews lasted approximately 30 minutes and were conducted by persons with extensive experience completing qualitative research and performing qualitative interviews. Interview questions and themes were identified following a thorough review of the relevant ACE literature. Following standard qualitative research procedure, the interview question wording was open-ended, to elicit a wide range of feedback from respondents. Each interview focused on (1) the general idea of military health surveillance programming; (2) the inclusion of mental health domains in military health surveillance; (3) the inclusion of ACE domains in military health surveillance; and (4) the implications of including ACE surveillance data in military medical records. A semistructured moderator's guide was developed to facilitate and standardize the interviews and to ensure comprehensive coverage of important topics. The same topics and standardized materials were presented to each interviewee. To ensure confidentiality, participants were instructed not to provide any identifying information once audio recording began.

Transcript Analysis

Transcripts were analyzed by experienced qualitative researchers to synthesize participant opinions into anticipated and unanticipated themes. Each interview was audio-recorded, transcribed verbatim, and analyzed. Based on the experience of the researchers and on a review of the ACE literature, we anticipated themes related to confidentiality, career impact, and trust. Additional major thematic areas were noted regarding the disclosure of sensitive medical and personal information (e.g., childhood trauma) by service members for military health surveillance. The interviewers conducted independent reviews of all transcripts to identify common themes, through rich content-based analysis of transcribed interviews. As a first step, quotes were sorted by theme; feedback was then grouped by audience category (soldier/spouse, male/female, length of service, etc.). This is

an accepted method in qualitative analysis of semistructured interviews, and ensures reliability of response coding.²⁷

RESULTS

Four main themes emerged from the 41 interviews: (1) concerns about confidentiality of medical information; (2) value of a standardized health surveillance program; (3) value of mental health surveillance; and (4) concerns about usefulness of ACE information.

Concerns about Confidentiality of Medical Information

Service members and spouses generally believe the military health care system takes patient privacy and confidentiality of medical records seriously and that safeguards have been instituted to prevent unauthorized access. However, service members and spouses still express serious concerns about breaches to privacy and confidentiality, as privacy is perceived to be inherently lacking in military culture.

Spouse of Service Member With <5 Years in Military (Spouse <5 Years). "Nothing is completely safe or private. I think that there are people that can view that information."

Female service member with >5 years in military (Female Service Member >5 years): "[The obligation to confidentiality] it's limited. Throughout the whole military it's limited. It's at a person's discretion what they should tell your commander."

Many believed that with concerted effort, breaches in patient confidentiality are possible.

Spouse >5 Years. "I think if somebody really wanted your information, they could get it. Even if they couldn't get a hold of it, they probably know someone who could."

Others lacked confidence in the privacy of medical information because of first-hand knowledge or stories they have heard about breaches in confidentiality due to unprofessional conduct on the part of medical or military personnel.

Female Service Member <5 Years. "I just had an issue yesterday where a doctor supposedly told my commander something out of my folder. I felt that was wrong."

Male Service Member <5 Years. "I know that my platoon sergeant sweet-talked a person into reading half of my evaluation. Nothing is 100% confidential."

Value of a Standardized Health Surveillance Program

Service members and spouses are generally receptive to the concept of health surveillance programs. A common opinion was that a military-wide health surveillance program would simplify the process for DoD and would be in keeping with military culture (e.g., "dress-right-dress").

Male Service Member <5 Years. "I think one form would be a lot easier. You have a hundred different things now."

Spouse <5 Years. "I think it's good. If it's just one basic form, it seems like it would be a lot less confusion and paperwork."

Although participants are generally receptive to a new program, several qualify their support, stating that it depends on the degree to which questions are intrusive or burdensome and how the information would be used. Participants are relatively comfortable with the use of aggregate information to understand general health trends in the military but are concerned about the possibility that the information might be used to stigmatize or segregate certain individuals or groups.

Spouse >5 Years. "If they're going to use it to isolate or stereotype a particular group or something, no [I don't think it's a good idea]."

Value of Mental Health Surveillance

Every service member and nearly all spouses interviewed thought mental well-being is important. A number said they had witnessed or experienced firsthand the effects of post-traumatic stress disorder, depression, and other conditions. Some commented on the devastating consequences of poor mental health.

Female Service Member <5 Years. "Every weekend you hear of people jumping out the window killing themselves. AWOL is high. Maybe if somebody talked to them about mental health or stress level, it would help."

Service members, in particular, see mental health as essential to troop readiness and individual well-being and recognize that mental health is increasingly a priority for military leadership.

Male Service Member <5 Years. "I think the Army has really promoted mental health a lot. They want you to seek help now. They make sure they let you know going on deployment and coming back."

However, perceptions exist that some commanders still respond defensively, fail to respond, or do not see mental health issues as within their scope of command responsibility, and a number express concerns regarding the consequences of disclosing such information.

Spouse >5 Years. "I've heard of spouses going to the commander and saying, 'My husband is physically hurting me,' and the commander tells them, 'Deal with it. That's a family problem. Don't air your personal problems.' So it depends on the commander."

Male Service Member <5 Years. "I know that for the infantry, it's a huge myth that if you go to mental health you are done." Overall, participants believe that service members stand to benefit from the inclusion of mental health questions in a health surveillance program, assuming confidentiality assurances. Study participants identified two potentially promising aspects of military health surveillance: (1) better mental health services for soldiers and (2) the potential to reduce the stigma associated with seeking mental health care services.

Uncertainty over the Usefulness of ACE Information

A consideration of some interviewees is the lack of immediate relevance of childhood experiences to behavior and well-being in adulthood.

Female Service Member <5 Years. "I don't see the point. I don't see how it has to do with now."

There is also the perception that treatment interventions necessary to address ACE-related issues are lacking. Participants believe that DoD should only include ACE questions if sufficient supportive interventions are in place to address the identified needs of service members.

Female Service Member >5 Years. "If they're going to do something about it, if they're going to help that person, then it's something that is very beneficial. If it's just collecting data so that they can weed out, then I don't think so."

Participants also expressed doubt that such questions would be answered honestly given the perceived consequences (i.e., negative career impact).

Male Service Member <5 Years. "25 out of 100 might tell you the truth."

Female Service Member <5 years. "I'd say 50:50 chance they will answer honestly."

Unanticipated Theme: Building Military Trust and Confidence

Although service members and spouses express concerns regarding certain aspects of military health surveillance, a number report that competent implementation and execution of such a program may afford DoD the opportunity to foster trust and confidence. Four ideas arose during interviews regarding ways the military could foster trust.

Address the Confidentiality of the System

Male Service Member >5 Years. "If you ask them to give their social security number, they're not going to talk in general. People who want to stay in the military, who want to have a future, who want to excel, they're not going to respond."

Use Methods Allowing Anonymous Reporting Rather Than Placing Results in Individual Administrative or Medical Records

Male Service Member <5 Years. "As soon as you say, 'This will not go on your record, no one will know about this,' then I know I can talk. I'm allowed to talk here. Nine times out of 10, people will not lie."

Communicate Program Intent Openly and Honestly

Male Service Member >5 Years. If you're straightforward, [soldiers] won't have a problem with it. When [leaders] start doing the sneaky stuff, that's when [soldiers] start thinking, 'What is the real reason?'

Communicate the Benefits To The Service Member

Female Service Member >5 Years. "If health surveillance can improve care, soldiers are likely to be receptive."

DISCUSSION

This study represents an initial attempt to explore the range of service member and spouse views regarding implementation of a U.S. military-wide ACE surveillance program. A qualitative research methodology employed systematic content

analysis of transcripts from 41 individual interviews completed by service members and spouses who reported one or more ACE and sought primary care at an Army troop medical clinic. This open-ended approach allowed for the interpretation of rich verbal information involving anticipated and unanticipated themes that would have been impossible to elicit using usual quantitative approaches. Service members and spouses reporting ACE were enrolled with the expectation that these individuals are likely most sensitive to the implications of asking ACE questions in routine military health surveillance.

Participants are generally receptive to the concept of a military health surveillance program if confidentiality assurances are in place, but concerns about breaches of confidentiality were a consistent and overarching theme expressed by a majority of participants. These concerns threaten the integrity of a health surveillance program seeking sensitive information. Interviewees reported that confidentiality concerns make it less likely that surveillance efforts will obtain valid responses to sensitive questions. Medical records, often seen as a confidential source of medical information, were viewed as a potential confidentiality compromise for sensitive ACE information. Finally, many participants were concerned that an ACE surveillance program would result in another inconvenient survey that yielded no apparent or tangible service member benefit.

Participants generally recognized the importance of collecting mental health data as part of health surveillance. However, they often expressed concerns about ACE questions (e.g., fear of stigmatization by peers, fear of negative career impact). These sentiments are consistent with those found by Rosen and colleague³ who reported that male soldiers were uncomfortable with questions about sexual abuse and were concerned about the possibility of other soldiers seeing their answers while they completed the survey. Furthermore, many participants did not believe that ACE are related to current well-being. It is likely that these individuals are unaware of empirical studies linking ACE and adult health status. Perhaps greater awareness of these studies may impact attitudes toward military ACE surveillance.

Some participants also expressed concerns regarding the collection of current mental health data; however, most participants reported that military leaders recognize the importance of mental health care and encourage service members to seek appropriate care. A small number of participants reported that commanding officers are insensitive toward the mental health needs of their troops, and important variability among commanders' levels of acceptance still exists. Although there appears to be an overall improvement with how command understands mental health disorders, we believe that education programs can be generally and respectfully implemented to improve the ways commanders accept and attend to the mental health needs of their troops.

Even though service members and spouses express concerns about a new ACE health surveillance program, a number believe that proper program execution and implementation may present a key opportunity for DoD to foster trust and confidence. Attention to services members' and spouses' ideas and concerns could help to ensure program success. Perhaps most importantly, service members suggest that information collected anonymously is more likely to result in valid responses.

This study, while an informative preliminary work, has limitations. Participants are all from one U.S. Army post. However, our purposive sampling resulted in the inclusion of men and women from across the career spectrum. Other investigators have evaluated more diverse military samples and identified stigma and confidentiality as significant barriers to mental health care.²⁸⁻³⁰ Therefore, we suspect Air Force and Navy participants would voice similar concerns.

The study relied on retrospective ACE reporting. Many methodological concerns, advantages, and disadvantages of retrospective reporting of childhood trauma are well documented in the literature.³¹⁻³³ Although validity of retrospective reports of childhood trauma is a concern, it is important to consider that for a large proportion of the population, the cases may go unreported. Although the ACE Study could not establish validity of reports of childhood trauma, the study was able to show consistency of the reports by respondents for eight separate ACE.³⁴ A future study employing a large representative military sample may provide an assessment of how common the concerns we have reported are among service members and spouses.

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