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US Military Service Members' Reasons for Deciding to Participate in Health Research

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Abstract

Researchers have reported challenges in recruiting US military service members as research participants. We explored their reasons for participating. Eighteen US military service members who had participated in at least one health-related research study within the previous 3 years completed semi-structured individual interviews in person or by telephone, focused on the service members' past decisions regarding research participation. Service members described participation decisions for 34 individual research experiences in 27 separate studies. Service members' reasons for participation in research clustered in three themes: others-, self-, and fit-focused. Each decision included reasons characterized by at least two themes. Reasons from all three themes were apparent in two-thirds of individual participation decisions. Reasons described by at least half of the service members included a desire to make things better for others, to improve an organization, to help researchers, and to improve one's health; understanding how they fit in studies; and convenience of participation. Findings may help researchers, study sponsors, ethicists, military leaders, and military decision-makers better understand service members' reasons for participating in research and improve future recruitment of service members in health research.

Keywords

military personnel; recruitment and retention; decision-making; altruism; qualitative description; research ethics

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Conflicts of Interest

The authors have no conflicts of interest to declare.

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Knowledge about research participants' decision-making can improve recruitment and retention strategies that target specific populations and can help facilitate high-quality research with representative samples. Researchers conducting research relevant to the health needs of military personnel often rely on US military service members to participate in their research but have reported that recruiting service members as research participants is challenging (Braun, Kennedy, Sadler, & Dixon, 2015; Bush, Sheppard, Fantelli, Bell, & Reger, 2013; Williams, Gaten, & Hagerty, 2012). Little is known about the reasons why service members decide to participate in health research studies. This study was designed to explore those reasons.

Research to Date on Reasons for Research Participation

Researchers have explored reasons for participating in research about cancer (Berg, Winick, Ingle, Adamson, & Blaney, 2010; Jenkins & Fallowfield, 2015; Moorcraft et al., 2016) and genetics (Hallowell et al., 2010; Trottier et al., 2013) by women (Jenkins & Fallowfield, 2015) and children (Berg et al., 2010; Trottier et al., 2013). Researchers have also explored why specific populations decide to participate in research without a specific disease or problem focus, such as reasons for research participation among prisoners (Hanson et al., 2015) and across racial groups (Kurt et al., 2016).

Two commonly noted reasons for deciding to participate in research include a desire for potential personal benefit (Hallowell et al., 2010; McCann, Campbell, & Entwistle, 2010; Moorcraft et al., 2016; Townsend & Cox, 2013; Trottier et al., 2013) and an altruistic desire to help others (Hallowell et al., 2010; Jenkins & Fallowfield, 2015; McCann et al., 2010; Moorcraft et al., 2016; Trottier et al., 2013).

In the literature about research participation decisions, we found no studies of US military service members. However, Campbell, Raisch, Sather, Warren, and Segal (2007) examined reasons for hypothetical participation in research among US military veterans compared to nonveterans. Veterans ($n = 60$), defined as former US military service members, and nonveterans ($n = 75$), defined as civilians without military experience, were asked to rate their likelihood of participating in six hypothetical studies and to rank a list of 10 possible reasons for participation. Among the veterans, the three highest ranked reasons for participating were improving one's health, improving medical care for others, and giving back to health care providers. Neither group was found to be more likely to participate than the other, but veterans were significantly more likely than nonveterans to say they would participate for altruistic reasons and as a way to show gratitude to their providers. A limitation of Campbell et al.'s (2007) study was the restriction of participants' choices to a prepared list of reasons for participating in research. The participants did not have an opportunity to propose additional reasons. The researchers did not investigate the motivations of current service members or inquire whether the participants had ever participated in a research study.

Campbell et al.'s (2007) findings supported their hypothesis that because veterans are generally dutiful citizens willing to make sacrifices for their country, they are more inclined to participate in research and to do so out of a similar sense of duty. These researchers and

others (Gaziano, Concato, Galea, Smith, & Provenziale, 2015) have voiced the assumption that current US military service members are likely to hold similar values. To date, however, no reports have appeared on US military service members' decisions regarding research participation (Bush et al., 2013). Understanding service members' motivations to participate in research may help researchers target recruitment efforts.

Methods

In this study, we used the qualitative description methodology as described by Sandelowski (2000, 2010). The goal when using qualitative description is to produce a descriptive analysis with representation of data that remains near to the original data. While description is the key feature, analytic interpretation remains an appropriate and essential aspect of this method (Sandelowski, 2000, 2010). Some of the common features of qualitative description include the use of purposeful sampling, semi-structured interviews, and qualitative content analysis (Kim, Sefcik, & Bradway, 2016; Sandelowski, 2000, 2010).

Sample and Recruitment

Ethical approval for this study was obtained from the institutional review boards of Madigan Army Medical Center, Tacoma, Washington, (Protocol #215029) and University of Washington, Seattle, Washington, (Protocol #48058).

Individuals serving in any service branch (Army, Navy, Air Force, and Marine Corps) of the US military at the time of enrollment were eligible to participate. The other inclusion criterion was experience as a participant in at least one previous health-related research study of any design (e.g., survey, interview, observational, interventional) within the past 3 years. Research led by military or civilian investigators of any institution was acceptable.

Participant recruitment occurred primarily at two large US military medical centers, each with numerous studies in progress, located in the Pacific northwest and southern California. One medical center was located in an area consisting primarily of Army, Navy, and Air Force personnel. The second medical center was located in an area consisting primarily of Navy and Marine Corps personnel. Service members were not required to be affiliated with, receive care from, or have participated in research performed at either medical center to participate.

Participants were recruited using study advertisements posted in clinic waiting areas and public areas in the medical centers. Participants were also recruited through word of mouth (e.g., asking consented participants to share study flyers with friends) and by networking with research colleagues and research coordinators. Two recruitment announcements were placed on one military medical center's social media site. The study was also registered in ClinicalTrials.gov with contact information available to interested candidates.

We sought a purposeful sample with maximum variation of participant cases (Maxwell, 2013; Sandelowski, 1995), including type of research participation experiences and personal characteristics, specifically service branch and military role (officer or enlisted). The authors anticipated that a sample of service members varying in these particular characteristics

would provide a range of perspectives that could be important for analysis (Sandelowski, 1995). Each eligible service member who expressed interest in study participation was enrolled, because all possessed characteristics and experiences that could contribute to the depth of information needed to achieve the study purpose (Maxwell, 2013). The goal was to obtain a sample large enough to achieve informational redundancy (Sandelowski, 1995).

A total of 18 service members participated. Table 1 summarizes sample characteristics. A majority of service members in the sample were white, at least 30 years old, had over 10 years of military service, and held advanced degrees. Service members with experience in conducting research accounted for 44% of the sample ($n=8$). Five service members (28%) who had experience conducting research and were known to the interviewer prior to enrollment.

Service members had previously participated in 1 to 3 studies, with a combined 34 research participation experiences in 27 separate studies. Of these, 19 experiences (56%) were intervention studies, 4 (12%) were observational studies, 8 (24%) were interview based, and 3 (9%) were survey based. Study topics included traumatic brain injury (TBI), post-traumatic stress disorder (PTSD), chronic pain, post-deployment reintegration, stress, fatigue, physical performance, and student and worker health.

Data Collection

Study procedures were completed in person or by telephone based on participant preference. The interviewer conducted 11 interviews in person (61%) and 7 by telephone (39%). The first author, who was the principal investigator, provided each potential participant with detailed study information and answered questions. Each service member's informed consent was obtained prior to enrollment in the study. Written consent was obtained for study procedures performed in person. Service members participating by telephone gave verbal consent using an IRB-approved telephone script, and their participation decision was documented. Participants did not receive incentives or compensation for participation. Demographic data and brief information about military and research experiences were collected, with the interview following immediately. Interviews were audio-recorded.

All interviews were conducted by the first author, both to maintain a consistent method and as a component of the first author's doctoral training in nursing science. In preparation, mock interviews were performed. Interviews were critiqued by the coauthors (senior scientist mentors with expertise in qualitative methods) to improve subsequent interviews.

Interviews focused on the service members' decisions regarding participation in research. Interview questions included "What things did you consider when deciding if you would participate in the study?" and "Why did you decide to participate in the study?" For service members who had participated in more than one study, each study was discussed individually. Interviews were semi-structured, which allowed for probing follow-up questions and deeper inquiry based on participants' responses (Hermanowicz, 2002). To avoid leading the participants, no suggestions of possible reasons for participation were offered by the interviewer. Interview audio recordings were professionally transcribed verbatim and verified by the interviewer for accuracy (Maxwell, 2013).

Data Analysis

Data collection and analysis occurred concurrently throughout the study, with existing data repeatedly reviewed, coded, discussed, compared, and written about in analytic memos as additional participants were enrolled. Analysis focused on the reasons the service members provided for having decided to participate in past research studies. The first author performed multiple rounds of coding, data comparison, and re-coding to ensure depth and accuracy of analysis. All authors reviewed the codes and coding for relevance and applicability to the data. All authors met regularly for analytic meetings to discuss insights and questions that arose throughout analysis.

Qualitative content analysis is a common analytic approach in qualitative description studies (Sandelowski, 2000). We elected to use conventional content analysis, as described by Hsieh and Shannon (2005). The lack of prior evidence precluded the use of a priori codes.

In the early stages of analysis, we used descriptive coding to identify key ideas, thoughts, and concepts (Hsieh & Shannon, 2005). In vivo coding was used when participants' exact words were unique or captured an idea particularly well (Miles, Huberman, & Saldaña, 2014). Initial codes were re-examined and consolidated throughout the course of analysis as codes evolved and became clearer (Hsieh & Shannon, 2005; Sandelowski, 2000).

To gain new insights and to inductively develop categories, we looked for connections, overlaps, and contrasts between data elements and codes (Hsieh & Shannon, 2005). Later in the analysis, categories were grouped, synthesized, and consolidated to form themes that encompassed major, related concepts. After completing the analysis, it was noted that all three themes were represented within the content of the first two service members' interviews and that all featured characteristics of all three themes were evident in the first three service members' interviews, although informational redundancy did not become obvious until additional participants had enrolled in the study.

Responses of participants with varying characteristics were compared for similarities and differences within and between themes. Examples of comparisons included participants with and without formal knowledge of research, participants with and without self-reported health-related reasons for participation, and contrasts between types of research, and between service branches, military roles (officer or enlisted), and education levels.

Data were managed using ATLAS.ti 7.5 (ATLAS.ti GmbH, Berlin, Germany) qualitative data management software. With this software, distinct transcript content was labeled with codes and the network view function was used to visualize relationships in the data and to compare findings according to key participant characteristics (Frieze, 2014). As an additional data visualization tool, the authors developed matrices using Microsoft Word to facilitate comparisons of participant characteristics within themes (Miles et al., 2014).

Validity and Rigor

Several strategies were used to improve validity and rigor. As the first author was the sole interviewer for the study, it was important for her to consciously evaluate her own beliefs, feelings, and thoughts about the study through reflexivity practices. Purposeful reflection

and acknowledging and bracketing assumptions and biases comprised an ongoing process of reflexive analysis of self-awareness and disclosure (Finlay, 2002; Merriam, 2009).

Substantial time (over 18 months) was spent collecting data with concurrent, reiterative analysis, during which time the first author read and reread transcripts and listened to audio-recordings multiple times for each interview. This long time frame allowed for several brief periods away from the data, with the opportunity to return with a fresh approach to discover nuances or subtleties that had not been detected previously (Maxwell, 2013; Merriam, 2009).

The first author met regularly with coauthor mentors, who provided expert guidance for methodological and analytic decisions throughout the study. In addition, findings and reports were discussed with and read by experienced military and civilian researcher peers (Merriam, 2009).

Results

Service members spoke in detail about their reasons for deciding to participate in research. Their reasons spanned three themes: others-, self-, and fit-focused. These themes, their featured characteristics, and the number of service members describing each characteristic are reported in Table 2.

Each participation decision was characterized by at least two themes. For 23 of the 34 participation experiences (68%), all three themes were apparent in the decisions to participate; for the 11 other experiences (32%), two themes were apparent. Service members with advanced degrees described more reasons than did service members with lower education levels. Sixteen of the 18 service members (89%) cited all three themes. Two service members (11%), both enlisted Army members with high school educations, reported elements of only two themes, the others- and fit-focused themes, but not the self-focused theme.

Others-Focused Reasons

The others-focused theme was seen in altruistic reasons for participating in research: anticipating benefit or gain for others. Thirteen service members decided to participate out of a desire to help make things better for others in the future. This reason was reported across participants regardless of service branch, military role, education level, presence/absence of formal knowledge of research, and presence/absence of self-reported health-related conditions.

The potential to make things better specifically for other service members had influenced the decisions of seven service members. When speaking of the service members they envisioned helping, participants usually referred to members of their own service. For example, an enlisted Army member stated, "What I'm trying to do in the long run is make it better for the soldiers after me." Making things better for others in general, without a specified group that would benefit, was mentioned by six service members. A senior Army officer with a desire

to help others was satisfied knowing that his help could have a lasting effect: “I could potentially help a larger category of folks than just me. It could be long term.”

A desire to inspire or create opportunities for improvement and change within an organization, such as the military health system or an academic institution, was mentioned by nine service members. Five Army members, all of whom had participated in research related to their own self-reported health-related conditions, said they had participated so the military would consider making changes in treatment options. For example, one senior officer said a reason for participating was the hope of “convincing the Army medicine system to use alternative care.”

A desire to help researchers accomplish their studies was an important reason for participating for nine service members. This included all eight of the service members with experience conducting research as well as one enlisted Army member with some college education. Five of the service members with experience conducting research were known to the first author, but this reason, as with all reasons reported here, referred to their participation decisions related to previous studies rather than for the current study. Of those service members desiring to help researchers, six expressed identifying with or relating to the researchers of the previous studies. For example, a Navy officer with experience conducting research during graduate school stated, “I wanted to make it easier on researchers to get their data . . . I feel for the researchers, how they choose subjects, how they reach out to them. It is really hard.” Service members’ descriptions of helping researchers were present-focused, with little or no emphasis on future benefits.

Although all nine service members who expressed a desire to help researchers had life experiences that were relevant to the research in which they had participated, only two had participated in studies that were specific to their own self-reported health-related conditions. They did not mention a similar desire to help their health care providers with research or to help those in the dual roles of health care provider and researcher. Of the 13 service members (72%) who had learned of at least one study either directly from their health care providers or through an advertisement in their health care clinic, none mentioned reasons for participating that related to helping or giving back to the health care providers who had treated or cared for them.

Four Army members who had participated in research related to their health-related conditions reported that by participating they were intentionally serving as role models to support and encourage other service members who might be struggling with chronic conditions and related stigma. One senior officer who had participated in TBI and PTSD research explained, “I’m trying to lead by example. I put my name out there. I put my rank out there. I put what I’m doing out there [participating in TBI and PTSD research]. I participate as somebody who is fully functioning, but [who] also is suffering from the wounds [of war].”

Seven service members (five of whom had experience conducting research) described their decisions to participate in research as an opportunity to contribute to science and knowledge.

For example, a Navy officer experienced in research stated, “I knew it would generate important information for our community . . . Knowledge that isn’t out there.”

A moral obligation to participate was described by three service members. “To not help when I have the ability to, it’s screwed up . . . To not help is just wrong,” said an enlisted Army member. The word duty, in the sense of an obligation to participate in research, was used by two service members, one in reference to a civilian-led study at a civilian institution and the other in reference to a military-led study at a military institution. No service members described participating in research for reasons deriving from a sense of duty linked to military service.

Self-Focused Reasons

In the reasons clustered in the self-focused theme, decision-making was based on the anticipation of personal gain as a result of participation. Nine service members, eight who were Army members with varying education levels and one Air Force officer with an advanced degree, participated in research studies out of a desire to improve their own current state of health. An Army officer stated his primary reason for participating in TBI research: “Number one was quality of life. I know that that’s kind of a selfish point of view, but at the time, my quality of life had clearly and seriously deteriorated.” In another example, an enlisted Army member described the frustration that led to the decision to participate in a study on the use of meditation for chronic pain and PTSD symptoms: “We had already exhausted all of the other alternatives. There was nothing left . . . What I was doing wasn’t working.”

Eight service members with chronic conditions, all Army members, described their eagerness to participate in research on complementary and alternative medicine therapies. All eight described the hope of reducing or avoiding chronic opioid use, and two described the hope of avoiding invasive procedures. One officer explained, “My interest was looking for alternative means of therapy, pain relief. I was looking for something to help, versus taking a pharmaceutical.”

Four service members, all with self-reported health-related conditions, said that gaining access to technologies or interventions that they believed would improve their health, but to which they also believed they would not normally have access, was a reason for deciding to participate in a study. Examples of such interventions included functional magnetic resonance imaging (fMRI) to evaluate post-concussive symptoms, transcutaneous electrical nerve stimulation for chronic back pain, and complementary and alternative medicine therapies such as acupuncture.

Interest in and personal relevance of research topics were important considerations for some service members. Six service members, all with experience conducting research, had participated in studies due to a profound interest in the research topic. They described finding the topic of the research inherently interesting, and not necessarily because the topic related directly to their own health. One Navy officer said, “I was curious as to what kind of questions they would ask . . . I’m always kind of interested in research.” Six service members, four with experience conducting research and two enlisted Army members,

emphasized that the relevance or importance of a particular topic had been a factor in their decisions. One explained, “If something is important to me, I’ll be more willing to help.”

Curiosity about a new device or technology to be studied was behind six service members’ decisions to participate. Service members had participated in studies that used novel interventions such as hyperbaric oxygen therapy for traumatic brain injury (TBI) and virtual reality therapy for post-traumatic stress disorder (PTSD). Testing a computerized cardiopulmonary resuscitation mannequin piqued the curiosity of one service member. A Navy officer with research experience during graduate school was interested in the online survey software used in a study: “I could maybe look at that survey and pattern my own research in the future using that kind of technology . . . It was the first time I’d seen it . . . That fueled my curiosity.” Curiosity as a reason for participation was voiced by service members across education levels.

Fit-Focused Reasons

Reasons for research participation clustered in the fit-focused theme were based on how well the service member believed they fit the research and how well the research fit the service member. Service members considered the importance of fit concurrently with benefit to others and self.

Convenience was a main feature of this theme and was a consideration for 14 service members. The amount of time required to participate in a study was the most important convenience factor, mentioned by seven service members. One Navy officer stated, “First and foremost is time and convenience.” Five service members mentioned that their own availability was another key convenience-related consideration. Home-based research and proximity to home or work were factors of convenience. Four service members found it to be preferable if they could participate in some or all of the research activities on their own time at home, such as online research. For research that could not be completed at home, four service members found it to be favorable if the research was performed in close proximity to their places of work, even if the research was outside of work hours.

Convenience was more often described as a reason for participating in studies unrelated to service members’ own health, by those who had experience conducting research, and by those who had participated in interview and survey research. The four service members who did not describe convenience as an important consideration were all enlisted Army members who participated in studies pertaining to their self-reported health-related conditions.

Simply meeting a study’s eligibility criteria influenced the decision to participate for nine service members (five with experience conducting research and four without such experience). Understanding how they fit as a potential participant, based on information contained in advertisements or through word of mouth, was a key reason for deciding to inquire about a study. One Navy officer stated of the decision, “I fulfilled the requirements . . . All the criteria were there . . . I think I fit that bill.” Disappointment was voiced by two service members who did not meet criteria for studies in which they had hoped to participate.

Seven service members explained that they had decided to participate because there was no good reason not to participate. After describing factors they had considered, such as risks and benefits, they summarized their final decision to participate in a lighthearted manner: Five said that they had simply thought, “Why not?” In the absence of sufficient reasons not to participate, they decided to participate. One Air Force officer with experience conducting research described deciding to participate in one previous study: “My default is to volunteer unless there’s a reason I can’t. I didn’t see a reason not to do it.”

Discussion

These US military service members participated in research for reasons focused on others, self, and fit. The finding that service members decide to participate in research for reasons focused on both others and self is not unique to this population. Hallowell et al. (2010) reported that participation in research encompasses interdependent familial and social reasons focused on others and personal reasons focused on self. Trottier et al. (2013) described considerations of benefit to self and to others as an “amalgamation of motives” (p. 599). Similarly, McCann et al. (2010) described conditional altruism, “the willingness to help others that may initially incline people to participate in a trial, but that is unlikely to lead to trial participation in practice unless people also recognize that participation will benefit them personally” (p. 1). Most service members in this study expressed both others-focused (altruistic) and self-focused reasons, indicating conditional altruism.

Dutifulness has been assumed to be an important reason for service members’ participation in research (Campbell et al., 2007). Though service members in this study did participate in research to support the interests of others, only two referred to a sense of duty as a reason for participating, and none described a sense of duty linked to military service. The only two service members who did not provide any self-focused reasons for participation were enlisted members with high school educations. Our findings suggest that while service members may not typically participate in research out of a sense of duty to military service, lower ranking and/or less educated service members may be more inclined to participate in research for reasons not focused on self.

Service members in this study did not report participating in research to help or give back to their health care providers, a reason ranked highly by veterans in Campbell et al.’s (2007) study and also noted by Jenkins and Fallow-field (2015). When recruiting service members for participation in clinic settings, where they may receive care from higher ranking health care providers, there is concern that lower ranking service members may feel obligated to participate. Thus, it is noteworthy that no service members in this study reported feeling compelled to participate because the research was presented by a healthcare provider or clinic.

The reason for participation in research to serve as a role model for other service members was unique and unexpected. Role modeling has not previously been reported as a reason to participate in research by any group of participants. The goal of serving as a role model may be unique to service member research participants, particularly those who hold higher ranks or have more years of service. Further investigation of service members’ participation in

research as a form of role modeling is needed. Identifying ways to leverage role modeling in an ethically appropriate manner in future research could help expand service members' awareness of opportunities to participate.

Some researchers have suggested that because service members have access to comprehensive health care, they are unlikely to be as motivated by access to health care or technologies (Bush et al., 2013) as other populations of research participants (Townsend & Cox, 2013). However, our findings suggest that access-related motivation may be a factor when research includes new or novel technologies. During the ethical review process, it is important to consider how activities within the research protocol, such as access to novel technologies, may influence a potential participant's decision. This factor may currently be underestimated in research involving service members.

Bush et al. (2013) surmised that due to their overall youth and health, service members would be less likely than others to be interested in participating in research that included alternative technologies. In this study, though nearly all participants were at least 30 years old, findings suggest the opposite. Service members in our sample, particularly those with chronic conditions, expressed interest in and readily participated in studies involving new technologies and complementary, alternative, and integrative therapies. We found that service members may participate in studies of alternative therapies with the aim of reducing or eliminating chronic opioid use, a significant problem among service members (Jonas & Schoomaker, 2014; Toblin, Quartana, Riviere, Walper, & Hoge, 2014). Many service members have acute and chronic conditions such as PTSD, TBI (Fischer, 2015), and pain (Toblin et al., 2014); their desire for new technologies and alternative therapy options is, therefore, an important consideration in designing future research. Schoomaker and Buckenmaier (2014) suggested an urgent need to research complementary and alternative approaches for service members, and our findings suggest that service members are receptive to such research.

The importance of fit when service members consider research participation is a useful finding because recruitment may be improved by placing more emphasis on factors that influence fit when designing research including service members. For example, factors of convenience, particularly time requirements, are largely within the investigator's control. Service members in this study had decided to participate in research when they understood how they fit a study's criteria. Making the inclusion criteria clear in study advertisements is important because when service members understand how they fit in a research study, they may be more likely to inquire about the study and to decide to participate.

Because recruiting service members for research has been noted to be difficult (Braun et al., 2015; Bush et al., 2013; Williams et al., 2012), it is important to avoid turning away those who actively inquire about their eligibility to participate. We recommend avoiding unnecessarily restrictive criteria. For example, intervention studies for PTSD often exclude all individuals with history of TBI. Such determinations could instead be made by the principal investigator or consulting clinician on an individual basis, with consideration for the extent and context of past injuries. When restrictive criteria cannot be avoided, investigators can identify ways in which service members may still be able to participate.

For instance, an investigator of a study with particularly restrictive criteria could partner with investigators of studies with less restrictive criteria, and could refer potential participants to these studies when appropriate.

Researchers may be encouraged that these service members were often willing to participate when they were made aware of opportunities, particularly when the research was convenient and the topic was relevant. The main obstacle is ensuring that service members are made aware of research opportunities. With appropriate permission, both networking within the military organization to disseminate targeted advertisements, such as posters and group email messages, and collaboration with research coordinators and health care providers could help inform service members of research opportunities.

Future Research

The findings from this study serve as a foundation of knowledge surrounding service members' decision-making as research participants. Future research should evaluate the reasons younger, less experienced, and less educated service members decide to participate in research. Investigating a possible relationship between education level and the propensity to participate in research would be helpful to researchers for targeting recruitment efforts. Although service members in our sample had participated in a wide variety of health research studies, most of the studies in which they had previously participated involved low levels of risk, such as interviews and surveys. As there may be different motivations for participating in studies involving higher risk, further information about service members' decision-making regarding higher risk studies would be beneficial.

Focusing on service members' reasons for declining research participation could also offer an important alternative perspective. Service members who had previously declined to participate in health research were sought for this study, but recruitment of this population was challenging. In our sample, we identified only three service members who had ever declined research participation. A comparison study is planned if more research decliners can be recruited. To obtain such perspectives, it may be necessary to collaborate with other investigators to gain access to service members at the time the decision to decline is made.

Strengths and Limitations

This study has several strengths. First, service members had the opportunity to speak freely about their research participation decisions. The interview guide allowed for probing and clarifying questions, a technique that adds to the validity of qualitative findings (Hermanowicz, 2002). In addition, inductively developing codes, categories, and themes, rather than relying on those determined a priori, allowed for identification of features that may not have been detected otherwise (Hsieh & Shannon, 2005). These approaches resulted in identifying service members' reasons for research participation that had not been previously documented, such as to serve as role models for other service members.

There are also several limitations. First, the final sample would most accurately be described as one of convenience. Despite attempts to recruit a purposeful sample with maximum variation in service branch and military role, the sample did not reflect the full range of military service members. Many of the service members in this study were from the Army

and/or were officers, whereas overall, the US military has nearly five enlisted members for each one officer. In addition, many service members in this study had advanced degrees, whereas only 13% of all service members hold bachelor's degrees and 8% hold advanced degrees. Nearly every service member in this study was at least 30 years old. In comparison, 43% of US military service members are under 26 years old (Office of the Deputy Assistant Secretary of Defense, 2014). The perspectives of younger, less-educated, and lower ranking service members were not adequately represented. No participants represented the Marine Corps. The one Air Force member reported reasons for research participation that were consistent with other service members, but it is unknown if other Air Force members or those from the Marine Corps would have expressed different reasons.

Five service members, all with experience conducting research, were known to the first author. Although these individuals were not well known to the first author outside the professional setting and there were no noted differences in their reasons for participation compared to other participants with knowledge of research, the acquaintanceship may have influenced their responses to interview questions. For example, a relationship outside the confines of a study might affect disclosure of previous participation in research for a health-related condition. We believe any concern related to their participation is minimal, but we point it out in the interest of transparency.

Conclusion

Service members' reasons for participating in previous research are assumed to be predictive of reasons for participation in the future. Our findings provide insight into US military service members' reasons for past research participation, which had not been previously described. These service members participated for reasons focused on others, self, and fit. Findings from this study may help researchers, study sponsors, bioethicists, military leaders, and military decision-makers to understand service members' reasons for participating in health research and improve future recruitment of US military service members as health research participants.

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Table 1

Sample Characteristics (N=18)

Characteristic	n	%
Service		
Army	12	67
Navy	5	28
Air force	1	6
Marine corps	0	0
Military role		
Officer	11	61
Enlisted	7	39
Sex		
Male	11	61
Female	7	39
Age group		
18–29	1	6
30–39	5	28
40–49	8	44
50	4	22
Years of military service		
0–10	2	11
11–20	9	50
>20	7	39
Race/ethnicity		
White, non-Hispanic	14	78
Hispanic	2	11
African American	1	6
Asian Pacific Islander	1	6
Education level		
High school or some college	6	33
Bachelor's degree	1	6
Advanced degree	11	61
Number of participation experiences		
1 study	8	44
2 studies	4	22
3 studies	6	33

Note. Total percentages may not equal 100 due to rounding.

Table 2

Themes in Service Members' Reasons for Deciding to Participate in Health Research

Themes	Featured Characteristics of Themes	Number of Participants (N =18)
Others-focused	Help make things better for others	13
	Help other service members	7
	Help others in general	6
	Improve an organization	9
	Improve availability of treatment options	5
	Help researchers	9
	Identify with researchers	6
	Contribute to science and knowledge	7
	Serve as a role model in hope of reducing stigma	4
	Moral obligation	3
Self-focused	Improve own health	9
	Try alternative and complementary therapies	8
	Avoid chronic medication use	8
	Avoid invasive procedures	2
	Interest in topic	6
	Relevance or importance of topic	6
	Curiosity about a device or technology	6
Fit-focused	Access medical technologies or interventions	4
	Convenience	14
	Time requirement	7
	Availability	5
	Participate at home	4
	Participate at or near work	4
	Understand how they fit in the study	9
	Insufficient reasons not to participate	7
	Why not?	5