

Perceptions of Physicians in Civilian Medical Practice on Veterans' Issues Related to Health Care

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Context: The percentage of total US residents in the military is lower than ever before. Many civilians, including civilian physicians, have little knowledge of US military actions or the day-to-day experiences and working environments of veterans.

Objective: To assess civilian physician knowledge of veterans' issues using a survey.

Methods: A 10-item survey was distributed to physicians at 2 primary care–focused medical conferences in Ohio to determine self-reported levels of comfort and familiarity with veteran-oriented topics.

Results: Of 350 surveys that were distributed, 141 surveys were returned. Of the 141 respondents, 101 practiced primary care, 19 practiced internal medicine, 16 practiced other specialties, and 5 did not report a specialty affiliation and were excluded from final analysis. A single respondent reported pediatrics as a specialty but indicated “not applicable” for all answers. This individual was excluded from final analysis. Overall, physicians reported feeling moderately comfortable with military terminology and uncomfortable with the diagnosis and management of traumatic brain injury. More than half of the respondents indicated that they were not comfortable discussing health-related exposures and associated risks that veterans might experience and that they were unfamiliar with referral and consultation services for veterans. The data collected had a high degree of reliability (Cronbach $\alpha=0.88$). Respondents of both primary care and internal medicine specialties scored statistically significantly higher than the other respondents in questions on veterans' medical conditions, military terminology, and military health risks ($P<.05$), although these 2 groups scored similarly ($P>.05$). Specialty orientation did not affect responses for questions on other topics ($P>.05$).

Conclusion: The data indicated an overall moderate level of familiarity among civilian physicians with veterans' issues. The results did not reveal an overall high level of comfort with any issues included in the survey. More research is needed to determine reasons behind the findings and methods to improve civilian physician comfort with various veterans' issues.

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From 2001 to 2014, a total of 2,637,900 individuals served with US forces in the wars in Iraq and Afghanistan (CDR E. Smith, oral communication, April 2014). Veterans of the Iraq and Afghanistan conflicts represent slightly less than 1% of the US population. In comparison, during World War II, 16 million US citizens, or 11.4% of the total population, served.^{1,2} Advancements in technology have allowed the US military to achieve mission objectives with fewer personnel and fewer casualties. Many veterans return from combat with unique medical issues not commonly seen in the US population as a whole.³ The reduction of total numbers of US troops engaged in contemporary wars has been associated with a cultural separation between the military and the US civilian population. This separation has been discussed in the *New York Times*⁴ as well as in *Joint Force Quarterly*.⁵

Veterans who seek care at US Department of Veterans Affairs (VA) facilities encounter some physicians who have a decreased knowledge of unique veterans' issues and culture. Jeffreys et al⁶ reported that veterans who have experienced trauma do not disclose this information because they feel ashamed, they lack trust in their health care provider, they do not feel believed, and they feel that their trauma is viewed inaccurately. Most importantly, veterans reported feeling uncomfortable disclosing trauma because they had encountered health care providers who seemed focused on their own agenda and uninterested in the veterans' concerns. Veterans Affairs facilities exist specifically to care for service members and their service-related conditions. If issues of trust and barriers to communication persist in the VA, it is likely that these issues will also be found in non-VA civilian medical practices.

Traumatic brain injury (TBI), posttraumatic stress disorder (PTSD), and general adjustment issues that veterans often face require open and clear communication with their physicians to facilitate optimal care. To our knowledge, however, few studies have evaluated communication issues between veterans and non-VA civilian

physicians. A literature search using the keywords *civilian*, *combat*, *communication*, *military experience*, *physician*, and *veteran* yielded studies reporting poor prognostic diagnoses,⁷⁻⁹ management of chronic pain,¹⁰ general principles of nonverbal communication,¹¹ factors affecting continuity of care,¹² and general behavior issues of veterans in relation to civilian health care.¹³ Most of the available literature has focused on veteran-patient populations seeking care at VA facilities, not from non-governmental medical facility cohorts.

A common theme in the literature is the need for physicians to develop effective methods to encourage patients to participate in their own health care decisions. Patients can become more active participants and achieve desired outcomes by communicating effectively with their physician.¹⁴ Patient participation emphasizes patients' willingness and ability to take independent actions to manage their health care. This concept is coupled with understanding one's role in the care process and having the knowledge, skill, and confidence to manage one's health and health care.^{15,16} Patients who do not participate in this way tend to default to passive encounters with their physician. In such circumstances, the patient may not ask their physician critical questions about their own health or current symptoms. Hibbard et al¹⁵ specifically identified the patient response, "I am confident that I can tell a doctor my concerns, even when he or she does not ask" as positively correlated with a higher degree of participation. Street et al¹⁴ reinforced this concept and noted that many "...patients take a more active role in the consultation when their physicians use partnership-building and other types of supportive communication."

With veteran populations, patient participation may be dependent on the physician understanding military culture and experiences. Identification of barriers to effective veteran-physician communication is desirable¹⁷⁻²⁰ to meet the goals of improving patient-physician trust,²¹ achieving compliance and continuity of care,²² and providing medical services to veterans by civilian health

care providers. An improved understanding of communication barriers can lead to effective training of physicians to better communicate with their patients.^{23,24} Understanding context and aspects of work and life specific to veterans will improve physician knowledge of veterans' concerns. This knowledge will thus lead to improved communication with veteran patients.

In light of these barriers to veterans' health care, it is important for osteopathic physicians to understand veterans' experiences as well as the culture of the military. In the present study, we assessed civilian physicians' self-reported knowledge of veterans' issues. On the basis of our anecdotal interactions with civilian primary care physicians, we hypothesized that the most unfamiliar issue among our study population would be referral and consultation services. To our knowledge, our study is the first to investigate non-VA civilian primary care physicians' self-reported understanding and knowledge of veterans' issues.

Methods

For the present study, a 10-item paper survey on veterans' issues was distributed and collected at an osteopathic primary care physician continuing medical education (CME) event and at a separate allopathic primary care CME event, both held in Ohio in spring 2013. Inclusion criteria were event attendees who were registered as physicians. Institutional review board approval was obtained in fall 2012 for distribution of the survey, and all respondents provided informed consent. Responses were anonymous and, other than the physicians' specialties, no demographic data were collected.

Survey Design

In addition to providing their specialty, respondents were asked what percentage of the patients in their practice were veterans. The remaining questions asked participants to select responses from a 5-point Likert-type scale. For the first set of questions, respondents were asked to

rate their comfort level with military medical conditions, military terminology, military health risks (eg, depleted uranium, smoke, chemical weapons), and the diagnosis and management of TBI and PTSD, with responses ranging from 1 ("very uncomfortable") to 5 ("very comfortable"). In the second set, physicians were asked about their familiarity with military referral and consultation resources, active-duty military culture and lifestyle conditions, and reservist military culture and lifestyle conditions, with responses ranging from 1 ("very unfamiliar") to 5 ("very familiar"). The last question in the survey prompted respondents to rate whether they needed more training, education, and information on how to properly communicate with and treat patients who have military-related health conditions, with responses ranging from 1 ("not at all") to 5 ("very much so").

Statistical Analysis

The reliability and validity of the data collected with the survey were analyzed in 3 steps. First, descriptive statistics (ie, percentage of respondents) and an index of reliability (Cronbach α) were computed. Cronbach α indicates how strongly each item is related (ie, "consistent") with the other items, and a value greater than 0.7 is considered to indicate acceptable consistency. Second, Pearson correlation coefficients (Pearson r) between pairs of items were computed and visualized using the R *qgraph* package (version 1.31).²⁵ Responses in the reverse-coded item were corrected before computing correlations. Third, to represent the set of item scores more parsimoniously we grouped the questions by topic into factors and applied statistical tests to those factors instead of to the individual items. For this purpose, we examined the underlying structure of the instrument—namely, how the items were associated with one another, using exploratory factor analysis (EFA) based on the maximum-likelihood estimation. Because the constructs were conceptually correlated, we used an oblique (Promax) rotation that allows factors to be correlated. On the basis of how

the survey was designed, we expected to retain 4 factors and statistically tested whether such a 4-factor model would fit the data better than models with more or fewer factors using the log likelihood-ratio test. We used EFA because the number of the latent constructs measured by the survey instrument, used to collect data for the first time, might not have turned out as we had expected. Afterwards we tested whether 3 specialties (ie, primary care, internal medicine, other) differed in any of the factors by applying Tukey Honest Significant Difference pairwise tests. All analyses were conducted using the R statistical language (version 2.15; R Foundation for Statistical Computing). Because survey items were on an ordinal Likert-type scale, we repeated correlation analysis and EFA using polychoric correlations. All tests performed were 2-tailed; a *P* value of less than or equal to .05 was considered statistically significant.

Results

Of 350 physicians who met the study criteria, 141 completed the survey. No statistically significant differences were noted in responses between the 2 conferences after analysis and *P* value adjustment. Therefore, both groups were combined for analysis.

The 141 respondents reported specialties as follows: 101 (72.1%), primary care (including family medicine, general practice, geriatrics, pediatrics, emergency medicine, and urgent care medicine); 19 (13.5%), internal medicine; 5 (3.5%), surgery; 5 (3.5%), psychiatry; 4 (2.8%), obstetrics and gynecology; 1 (0.7%), anesthesiology; and 1 (0.7%), radiology. For statistical purposes, the specialties of surgery, psychiatry, obstetrics and gynecology, anesthesiology, and radiology were combined to form an “Other” category. Five respondents did not report their specialty and were thus excluded from final analysis. One respondent who indicated pediatrics as a specialty reported “not applicable” or “0” for all responses and was excluded from final analysis.

The 135 remaining physicians’ responses were compared and analyzed. *Figure 1* shows that overall, physicians reported feeling moderately comfortable with military terminology and uncomfortable understanding the diagnosis and management of TBI. More than half of the physicians indicated that they were not comfortable discussing health-related exposures and associated risks that veterans might experience, and half reported that they were unfamiliar with referral and consultation services for veterans. Overall, the data collected with the survey displayed a high degree of reliability (Cronbach $\alpha=0.88$).

A matrix of correlations was visualized as a network of items (*Figure 2*). Because the new results from the correlation analysis and EFA were identical (ie, $r_{\text{difference}} < 0.02$), the results based on the more popular Pearson correlation are shown.

Respondents’ self-perception of knowledge about or familiarity with veterans’ medical conditions, military terminology, and military health risks were more strongly related to each other than other items. Furthermore, the network (*Figure 2*) suggests a strong correlation between items about respondents’ understanding of the diagnosis and management of TBI and PTSD and between items about respondents’ familiarity with military culture and lifestyle of active veterans and reservists. Lastly, although the items about referral and consultation were correlated with many other items, the item about respondents’ perceived need for training was negatively correlated with the item about referral and consultation.

The EFA indicated that a model with 4 factors fit the data best (log likelihood-ratio tests, $P < .01$), accounting for 66% of the variances across the 9 items (*Table*). Consistent with the patterns of correlations depicted in the network (*Figure 2*), factor 1 loaded highly onto the items about veterans’ medical conditions, military terminology, and military health risks, and factor 2 loaded highly onto the items about military culture and lifestyle of active veterans and reserv-

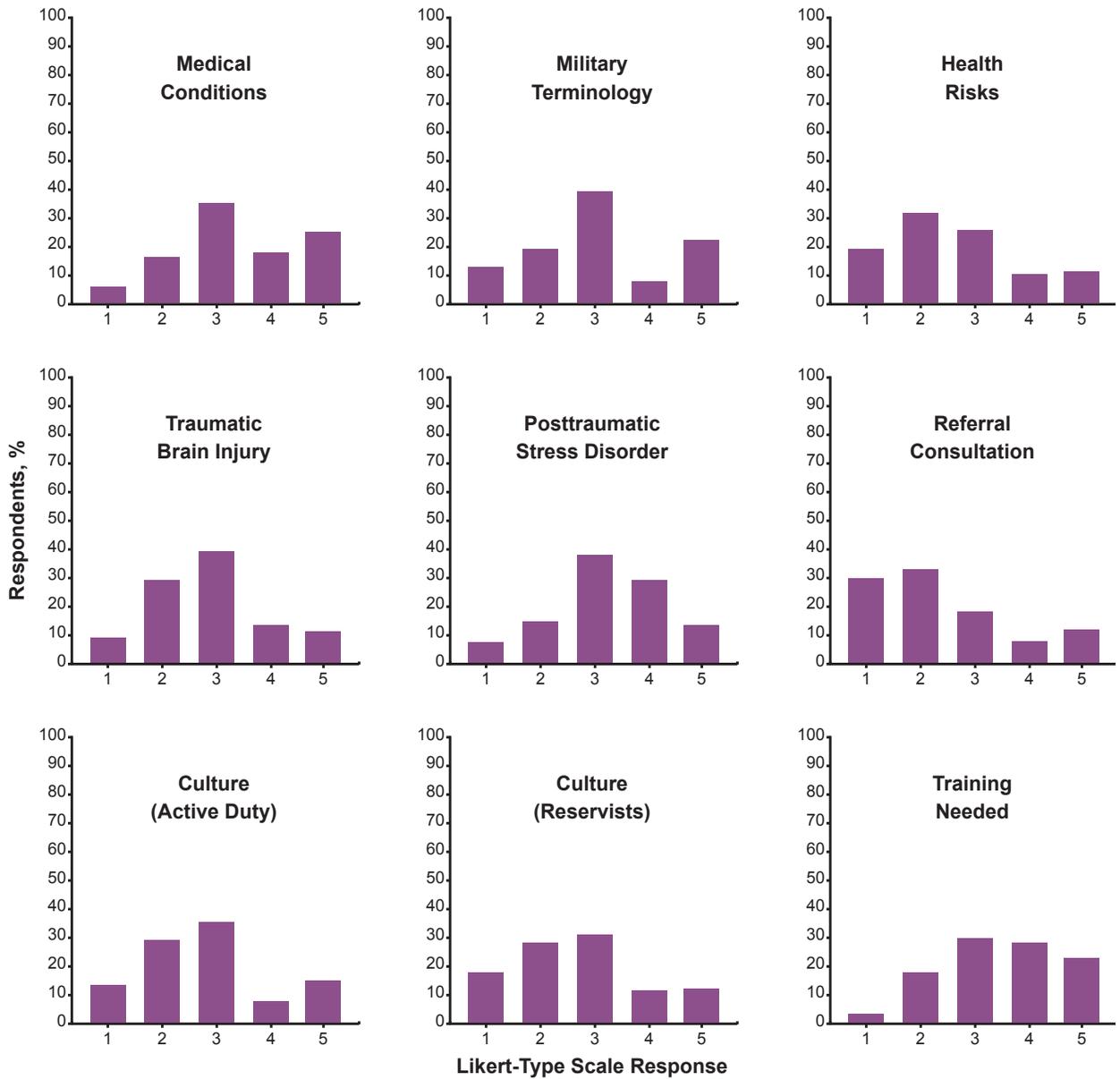


Figure 1. Percentage of physician respondents (N=135) to a survey about veterans' health care issues by survey item and item response. A rating of 1 indicated very uncomfortable/very unfamiliar/not at all; 3 indicated moderately comfortable/moderately familiar/somewhat; 5 indicated very comfortable/very familiar/very much so.

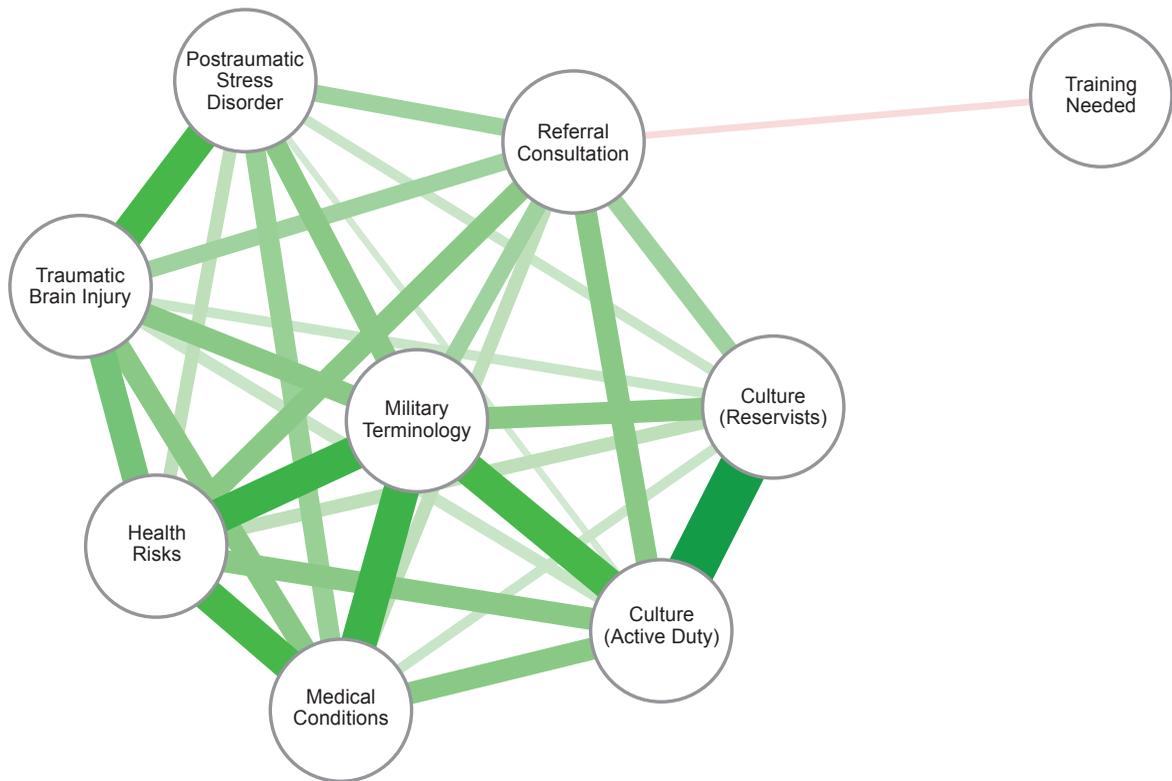


Figure 2.

Visualization of correlation matrix of results of a survey on civilian physicians' perception of veterans' health care issues (N=135). The circles represent survey items, and the lines represent a Pearson correlation coefficient between 2 items. The line width depicts the absolute values of correlations (ie, a thicker line indicates a greater correlation). Green and red lines represent positive and negative correlations, respectively. Pearson r s less than 0.3 are hidden and all displayed r s are statistically significant ($P < .01$).

ists. Factor 3 loaded onto the items about understanding the diagnosis and management of TBI and PTSD. Finally, factor 4 loaded highly onto the item about referral and consultation and negatively onto the item about perceived need for training.

We compared whether the 3 specialty groupings (ie, primary care, internal medicine, and other) differed in any of the 4 factors. In factor 1 (ie, veterans' medical conditions, military terminology, and military health

risks), respondents of both primary care and internal medicine scored statistically significantly higher than the other respondents ($P < .05$), although these 2 groups scored similarly ($P > .05$). On the other hand, the 3 specialties did not differ in any other factors ($P > .05$). These results suggest that primary care and internal medicine physicians were more experienced with these specific general military topics than the other physicians, but they may not differ in other military-related domains.

Table.
Factor Loadings by Question and Variance Accounted for by Factor
in a Survey of Civilian Physician's Knowledge of Veterans' Health Issues^a

Item	Loading ^b			
	Factor 1	Factor 2	Factor 3	Factor 4
Survey Question				
Medical conditions	0.91	...	...	...
Military terminology	0.81	...	...	...
Health risks	0.81	...	...	...
Traumatic brain injury	...	...	0.42	...
Posttraumatic stress disorder	...	...	1.07	...
Referral and consultation	...	...	...	0.58
Culture (active duty)	...	0.84	...	...
Culture (reservists)	...	0.80	...	...
Training needed	...	...	...	-0.67
% of Variance Accounted For	25	16	16	10

^a Statistical analysis was applied to factors instead of individual survey questions.

^b Pearson $r < 0.3$ are hidden.

Discussion

With the exception of factor 1 topics (ie, veterans' medical conditions, military terminology, and military health risks) (*Figure 2*), physicians' self-reported knowledge of veterans' issues did not appear to be affected by specialty orientation. This lack of difference is surprising—in our experience, primary care physicians are more likely than specialists to consider social elements affecting their patients while taking patients' history. Further study of barriers to communication between veterans and their civilian health care providers is needed to explain this finding.

The present study was limited by its small cohort of respondents who attended the 2 events in Ohio and by a response rate of 40%. No specific measures were taken to ensure that respondents did not complete the survey twice. The sample cohort may not have represented a true cross section of Ohio physicians, which may have introduced bias. The events occurred within 2 months of one another

and cross participation was considered unlikely given that the 2 groups represented an allopathic CME event and the other an osteopathic CME event. The current study did not account for differences between the 2 physician groups. Broader demographic data were not collected, which prevented analysis of age, military service, sex, and geographic differences within the respondent population. Distribution of the survey in paper format may have limited the distribution cohort size. Electronic distribution may have yielded a larger cohort and would have facilitated demographic information collection and controlled for the possibility of multiple survey completion by individual respondents. Future studies should include a larger sample cohort with a higher response rate, refined demographic stratification of respondents, and more nuanced and specific topic area questions.

According to our findings, 26% of respondents reported that more than 20% of patients in the respondents'

practices were veterans. This finding is higher than expected considering that approximately 164,000 primary care physicians (excluding pediatricians)²⁶ and 22,000,000 veterans live in the United States,²⁷ indicating approximately 134 veterans per US primary care physician. Of those veterans, approximately 12 are recent combat veterans from the wars in Iraq and Afghanistan (CDR E. Smith, oral communication, April 2014). Assuming an average primary care mean patient panel of approximately 3000 patients,²⁸ 134 veterans represent 4.5% of such a hypothetical average practice.

Despite reporting relatively high percentages of veteran patients in their practices, respondents indicated the need for more training in the areas surveyed. This finding suggests that physicians are sensitive to the relevance of veterans' issues to their practices and that awareness of veteran-specific issues may have importance for physicians in optimizing care for this group of patients. Medically relevant cultural awareness issues are now taught in medical schools, such as the Ohio University Heritage College of Osteopathic Medicine at Athens (A. Mowrer, oral communication, May 2015). Evaluation of the optimal point in medical education for training in veteran cultural awareness has not been studied, however. More research regarding the timing of education on veterans' issues in pre- and postdoctoral medical education programs is needed.

Future research efforts should focus on specific veterans' issues such as combat-related TBI, PTSD, access to VA medical services, and communication barriers between VA health care providers and non-VA civilian health care providers regarding mutual patient management.

Conclusion

Although our survey results indicated a general familiarity and comfort level among civilian physicians with veterans' health topics, the data also suggest that a gap exists between the top levels of familiarity and comfort

and the current self-reported levels. Additional research is needed on barriers to and deficits of information among civilian practitioners on specific health issues and social circumstances of veterans. Education is needed to facilitate sensitivity to the surveyed issues among the civilian physician population and to improve care for veteran patients.

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Author Contributions

Dr Fredricks provided substantial contributions to the project conception and design and acquisition of data; Dr Fredricks and Dr Nakazawa provided interpretation of data, drafted the article and revised it critically for important intellectual content; Dr Fredricks gave final approval of the version of the article to be published; and Dr Fredricks and Dr Nakazawa agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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