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The Use of Theory-Based Formative Research to Design Suicide Prevention Messaging for U.S. Veterans in Midlife

Elizabeth Karras, PhD^{1,2,3}, Cara M. Stokes, MPH^{1,3}, Sara C. Warfield, MPH^{1,3}, Heather Elder, PhD⁴, Brady Stephens, MS¹, and Robert M. Bossarte, PhD^{1,3}

¹VA Center of Excellence for Suicide Prevention, Canandaigua, NY, USA

²University of Rochester, Rochester, NY, USA

³West Virginia University, Morgantown, WV, USA

⁴Massachusetts Department of Public Health, Boston, MA, USA

Abstract

Background.—Communication campaigns offer a viable mechanism to promote suicide prevention and reinforce mental health for U.S. veterans in midlife, a group with a high suicide burden. However, little empirical investigation of this type of messaging has been conducted, with formative campaign research conspicuously missing from the limited literature.

Aims.—Using the theory of planned behavior as a guide, formative research was conducted to inform the design of suicide prevention messaging by (a) describing and measuring several theoretical constructs among our audience and (b) modeling associations between constructs and intentions to seek help for suicidal behaviors and mental health more broadly.

Methods.—Telephone-based cross-sectional surveys were collected between 2014 and 2016 from a nationally representative sample of veterans with analyses restricted to those aged between 44 and 65 years ($n = 809$). Multiple logistic regression was used to identify significant factors associated with intentions to seek help for either suicidal behaviors or mental health.

Results.—Perceived behavioral control was one of the largest predictors of intentions to seek help for both suicidal behaviors and mental health concerns. Descriptive norms were also significantly associated with suicide-related intentions. Data further suggest several types of attitudes (i.e., discordant beliefs, stereotypes) to consider when designing messages for this group.

Discussion.—This study represents one of the first efforts to document and describe theoretical constructs and their influence on intentions among veterans in midlife to contribute to the development of evidence-based messaging for veterans informed by a conceptual framework.

Conclusion.—Findings have important implications as the use of communication strategies for suicide prevention grows increasingly popular.

Corresponding Author: Elizabeth Karras, Center of Excellence for Suicide Prevention, Department of Veterans Affairs, Canandaigua VA Medical Center, 400, Fort Hill Avenue, Canandaigua, NY 14424, USA. elizabeth.karras@va.gov.

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Keywords

communication campaigns; mental health; public education; suicide prevention; veterans

Suicide continues to represent a major public health crisis in the United States. Nearly 43,000 lives are lost each year (Kochanek, Murphy, Xu, & Tejada-Vera, 2016), with more Americans dying by suicide than in motor vehicle accidents (Rockett et al., 2012). It is estimated that nearly 18% of these deaths are U.S. military veterans (U.S. Department of Veterans Affairs [VA], 2016a). The largest number of veteran suicide decedents are middle aged, with more than two thirds of deaths occurring among those who are 50 years and older (VA, 2016a). As such, effective programs that target this segment of veterans are needed to help mitigate risk by facilitating help seeking. Communication campaigns offer a viable mechanism to promote suicide prevention and reinforce mental health among middle-aged veterans with strategically designed messages that motivate and validate targeted behaviors (e.g., help seeking; Langford, Litts, & Pearson, 2013). However, limited data have been published to inform the development of suicide prevention messaging targeting this group.

While the literature on suicide prevention campaigns is nascent, several studies have identified significant association between messaging and increased awareness and use of crisis support services (i.e., crisis lines) among several broad populations, including veterans (Bossarte et al., 2014; Elder, Karras, & Bossarte, 2016; Jenner, Woodward Jenner, Matthews-Sterling, Butts, & Williams, 2010; Karras, Stephens, Kemp, & Bossarte, 2014; Karras, Lu, Elder, et al., 2016; Karras, Lu, Zuo, et al., 2016; Oliver et al., 2008). Such findings show promise for public messaging to improve health outcomes; however, research has primarily been conducted postimplementation with limited assessment of determinants of help seeking. A range of attitudes and beliefs about mental illness and treatment influence the likelihood for veterans to seek help. For example, perceptions of stigma surrounding mental illness and treatment are commonly reported barriers to help seeking among this population alongside logistical concerns (e.g., time/cost). Formative research provides an important opportunity for data-driven message development to influence the underlying mechanisms that drive behavior change to increase help seeking among intended audiences (Noar, 2006; Randolph & Viswanath, 2004; Snyder et al., 2004). Yet little attention has been paid to the formative process of suicide prevention campaign design despite its empirical link to improved messaging effects (e.g., Chambers et al., 2005; Langford et al., 2013). What's more, communication research has largely focused on downstream outcomes proximal to suicidal crisis (e.g., hotline use) (e.g., Jenner et al., 2010; Karras, Lu, Zuo, et al., 2016; Oliver et al., 2008) with comparatively few efforts to modify upstream determinants that drive help-seeking behaviors (e.g., attitudes supportive of mental health).

Theories can be used as cogent guides to formative campaign design particularly in the absence of research. The theory of planned behavior (TPB; Ajzen, 1985; Ajzen & Gilbert Cote, 2008) suggests that individuals are more disposed to engage in and adhere to a behavior if they believe it is beneficial, achievable, and perceived as acceptable. This approach argues that attitudes and beliefs are proximal determinants of intentions, which in turn, motivate (or impede) subsequent behavior change. Therefore, targeting theoretical

constructs that predict health behavior with research-informed messaging can increase the likelihood (or intent) that veterans will accept and adopt help seeking if/when needed. While theory-driven campaigns are recommended and described in the larger health communication literature, only a small number of studies have applied theory to inform suicide prevention messaging strategies (Daigle et al., 2006; Shemanski & Cerel, 2009). To date, no published study has reported on such formative efforts for suicide prevention messaging with veterans in midlife.

The goal of this article is to report initial findings from theory-informed formative research to guide the use of suicide prevention messaging with veterans in midlife. To do so, survey data were collected from a national sample of veterans. While multiple methods can be employed for formative research, surveys can serve as an efficient method to assess predispositions of large, heterogeneous groups (Parvanta, et al., 2013). We first describe several theoretical constructs identified above among our intended audience (Aim 1). Next, we model associations between these constructs and intentions (an important, proximal precursor to behavior according to TPB) to understand the degree to which they influence the likelihood to seek help among this group (Aim 2) and to assess their relative magnitude to identify those to potentially target with messaging (Aim 3). Intentions (vs. actual behavior) for seeking help for both suicidal thoughts and behaviors (STB) and mental health are examined to explore the effects of constructs on both proximal and more distal risk.

Method

Sample and Data Collection

Telephone-based cross-sectional surveys were conducted from December 2014 through September 2016 as part of a larger initiative examining suicide prevention efforts targeting veterans. The sample was randomly selected from a data set containing veterans enrolled or had received VA health care since 1992 or compensation or pension benefits since 2002. The demographic composition of the recruitment data set is comparable to that of the larger, general veteran population. Individuals were eligible to participate if they were veterans, between the ages of 18 and 89 years, able to speak and understand English, and capable of understanding the study goals. Individuals were recruited by both invitational mailing and telephone contact. One individual per household participated with a 30% overall study participation rate. Procedures were approved by the VA Institutional Review Board in Syracuse, New York. A waiver of informed consent was obtained to administer the survey.

Measurement

The research team drafted the survey by initially using several measures suggested by Ajzen (1991) for the development of TPB questionnaires, which were then adapted to reflect the context (STB/mental health) and primary outcome (i.e., intentions to seek help). The survey was then pilot tested with veterans in the target demographic, was shortened to enhance completion rate (15 minutes or less) and revised to use Likert-type response options based on the feedback obtained (e.g., participant burden; easier to understand Likert-type scales by telephone). The refined survey was then used for data collection to capture several TPB constructs (described below).

Participants were asked to indicate their agreement with statements that assessed TPB constructs, including: (a) attitudes toward the behavior, (b) descriptive (i.e., what others think/do) and injunctive (i.e., what close others want me to think/do) norms related to mental illness and help seeking, (c) perceived behavioral control (PBC, i.e., capability to seek help), and (d) intentions to seek help for both STB and mental health concerns, if in need. Responses were captured on a 5-point Likert-type scale ranging from 1 = *strongly disagree* to 3 = *neither disagree/agree* to 5 = *strongly agree*, except for intentions, which ranged from 1 = *not at all likely* to 3 = *somewhat likely* to 5 = *extremely likely*. Participants were asked to report health service use from the Veterans Health Administration (VHA) in the past year. We also ascertained if they had ever spoken with anyone about suicidal thoughts or behaviors. Finally, self-reported physical and mental health status and functional limitations in the past 30 days were collected as well as limited demographics.

Data Analysis

Data were weighted by age and sex to be representative of the sample frame. The reported analyses are restricted to veterans between the ages of 44 and 65 years to capture responses among those who were middle-aged. First, we sought to describe the distribution of responses to questions that examined theoretical constructs. The two primary outcomes of interest for analyses were intent to seek help for (a) STB and (b) mental health concerns. The data distribution for these outcomes did not permit for granular analysis of the original coding scheme and were collapsed into three categories as 1 to 3 = *less likely (not at all, not likely, and somewhat likely)*, 4 = *likely*, and 5 = *extremely likely* to compare strong intent (i.e., extremely likely) with other levels of endorsement. Next, bivariate analyses were conducted with demographics and theoretical constructs using chi-square tests or the Monte Carlo simulation (when appropriate) to estimate exact *p* values to obtain initial insights on their associations with help-seeking intentions. Theoretical constructs were then standardized (0, 1) to improve interpretability and to assess their relative importance on intentions. Finally, multiple logistic regression was used to identify significant factors with intentions to seek help for either STB or mental health. All models controlled for gender, age, race, and ethnicity. Interactions were also considered a priori to explore potential relationships that may influence intentions. Less than 6% of data were missing and were imputed using multiple imputation for each variable except intentions, age, and gender. Analyses were completed in SAS 9.4.

Results

Sample Characteristics

A total of 809 surveys were included in reported analyses. Table 1 summarizes the demographic and health characteristics of the sample. Participants were predominately White (73.16%), male (83.77%), and had utilized VHA services in the past 12 months (75.63%). One third of veterans were exposed to combat during military service. A considerable proportion of veterans self-reported poor/fair mental (33.39%) and physical (44.73%) health in the past 30 days and functional limitation due to their health status. Bivariate analyses found significant associations for intentions to seek help for STB with mental health status and related functional limitation ($p < .05$). Age, physical and mental

health status, and functional limitation due to mental health were significantly associated with intent to seek help for mental health ($p < .05$).

Aim 1: Describe Theoretical Constructs

Attitudes Toward the Behavior.—Table 2 reveals that the majority of participants (81.70%) strongly agreed that anyone can suffer from mental health concerns. However, 24% also strongly agreed that they would not want others to know if they were experiencing mental health issues themselves. More than one quarter of veterans (28.78%) did not express a strong opinion as to if they would want their mental health issues known by others (i.e., reported neither agree/disagree). This trend held true when examining items related to public mental health stigma. When asked, one third of participants (33.42%) held a neutral stance as to whether “people with mental health concerns are a danger to others.” A total of 30.42% of the sample still endorsed (strongly/agreed) this attitude, while 36.12% strongly/disagreed. Veteran responses also indicated agreement that treatment is beneficial and can facilitate recovery to lead a “normal life.”

Norms.—Measures of injunctive norms revealed that participants strongly agree (78.15%) that those important to them would want them to seek help; however, comparatively, less endorsed descriptive norms that close others would actually seek help themselves if experiencing a mental health concern (26.37% strongly agreed). Nearly 30% held no strong opinion if close others would resolve their own mental health issues. Furthermore, a large proportion of participants strongly/agreed (60.57%) that only a small number of people seek help for mental health; smaller percentages strongly/ disagreed (13.4%) or neither agreed/ disagreed (26.29%) with this item. Participant agreement that people were caring toward those with mental illness varied considerably, which may further confound a veteran’s decision to seek help when in need.

Perceived Behavioral Control.—Overall, 51.39% of participants strongly agreed that help seeking would be easy for them, 2.19% strongly disagreed, and 13.75% reported neutrality. The majority of participants also believed that they could seek help if they wanted to.

Intentions.—The raw response distributions for intentions indicate that veterans possess strong intentions. Specifically, the majority of the sample (62.30%) reported that they were *extremely likely* (5) to seek help for STB if in need, while 15.83% indicated that they were *likely* (4). In contrast, 16.84% responded that they were *somewhat likely* (3), and less than 5% reported that they were *not at all* (1) or *unlikely* (2) to seek STB-related help. The raw distribution was comparable for intentions to seek help for mental health if in need. Collapsed intention outcomes showed that 21.87% and 22.93% were *less likely* (1–3) to seek help for STB and mental health, respectively. All theoretical constructs measured were found to be significantly associated with intentions to seek help for both STB and mental health ($p < .05$).

Aim 2: Associations With Intentions to Seek Help

Tables 3 and 4 summarize significant results from adjusted logistic regression models with “less likely” serving as the reference category for analyses. Analyses found that males were 1.60 times more likely (95% confidence intervals [CI] [1.08, 2.35]) to intend to seek help for STB after adjusting for covariates. Participants who reported poor/fair mental health were 33% less likely to intend to seek help for STB (95% CI [0.46, 0.96]). As participant agreement increased with “not wanting others to know about their mental health concerns,” intentions for help seeking for STB decreased (odds ratio [OR] 0.72; 95% CI [0.63, 0.81]). Increases in perceptions that close others would seek help increased the odds for veterans to intend to seek help for STB (OR 1.36; 95% CI [1.16, 1.59]). Finally, measures of PBC were also associated with an increased intent for help seeking. Interactions between demographics, theoretical constructs, and intentions were included in the model but were insignificant.

PBC (i.e., help seeking would be easy) was significantly associated with intentions to seek help for mental health when controlling for model covariates. More specifically, as endorsement of this variable increased, the odds to intend to seek help for mental health also increased (OR 2.42; 95% CI [2.05, 2.86]). Conversely, agreement with selected attitudes (i.e., “would not want others to know . . .”) was significantly associated with decreased intentions to seek help (OR 0.56; 95% CI [0.27, 0.85]). An interaction was also found for age and attitudes that neared significance. Stratified analyses reveal that the odds of veterans not wanting others to know they were experiencing a mental health concern increased for those between the ages of 44 and 55 years (OR 1.11; 95% CI [1.01, 1.21]).

Aim 3: Magnitude of Associations

Finally, direct comparisons of standardized estimates were made to examine the relative importance of theoretical constructs on intentions to seek help. Results show that PBC is the strongest predictor of help-seeking intentions for both the STB and the mental health models. Table 3 reveals that descriptive norms also play an important role and should be considered when designing messages that target STB intentions.

Discussion

This study represents one of the first efforts to report formative research informed by the TPB for the design of suicide prevention messaging for middle-aged veterans. Findings provide initial support for the TPB as a useful framework for understanding determinants that underlie intentions to seek help among veterans that can be used more effectively to promote related help seeking. Our analyses offer insights on factors that can be modified by communication intervention and identify several theoretical constructs that are significantly related to downstream (i.e., STB) and upstream (i.e., mental health) help-seeking intentions among this group. Our approach contributes to the development of evidence-based messaging for veterans grounded by a theoretical framework and has implications for broader practice as the use of communication strategies for suicide prevention grows increasingly popular. Future directions are discussed below and underscore the need for

continued TPB research to identify constructs that are predictive of help seeking to target with messages.

Communications developed to strengthen intentions among this veteran population should consider the influence of descriptive norms. One of the largest estimates was found for this variable among those assessed when modeling associations with intentions to seek help for STB. Beliefs about close others' help seeking was a significant predictor unique to STB (vs. mental health) underscoring the important role of social climates in promoting related help-seeking behaviors. As such, communication strategies that convey positive descriptive norms (i.e., that others seek help themselves) may motivate and validate help seeking as common and acceptable. Future research to inform such strategies should further examine the relative contribution of *both* descriptive and injunctive norms on the likelihood to seek help for STB by comparing the use of different reference groups (e.g., other veterans, friends/family). Findings also revealed some differences between how veterans believe people actually behave and how they think others want them to behave. For example, participants agreed that those close to them would support their help seeking yet believed that only a small number of people actually seek help themselves for mental health issues. While there may be multiple interpretations for this finding (e.g., varying or misperceived beliefs across reference groups), it is of particular consequence as veterans may look to other people's behavior (or beliefs of what others may do) when evaluating their decision to seek help for STB (either now or in the future). Few veteran-centric efforts have been implemented to promote healthy norms or address discordant beliefs underscoring an opportunity to address this niche. Given our findings, the potential for differing beliefs across descriptive and injunctive norms as well as misperceived norms should be examined when developing this type of messaging.

Data further suggest that PBC is significant across risk as it was associated with increased intentions to seek help for STB *and* mental health. While this may be an artifact of the sample as agreement with these items was generally high in the study, findings are consistent with prior research that has predicted a range of health behaviors (e.g., Fishbein et al., 2001; Noar, 2006). Therefore, messaging to improve upstream or downstream intentions may also integrate methods to model distinct, targeted behaviors to show help seeking as viable and achievable (e.g., where and how to seek help). This may be especially important among veterans in midlife as poorer mental health was associated with decreased intentions to seek help for STB in our study. While actual help seeking was not captured in this study, control factors are critical to translate intentions (which were generally high in this study) into health behaviors (e.g., Barg et al., 2012; Parschau et al., 2014; Schwarzer, 2008; Sniehotta et al., 2005). As such, measures of additional control-related outcomes such as *perceived* (e.g., control beliefs) and *actual* (e.g., logistical barriers) facilitators/barriers should be prioritized in future research to fully capture their effect on the likelihood for help seeking and enable messages to better address key gaps.

Public messaging can also be used to bridge other gaps such as those between attitudes and intentions to increase the likelihood for help seeking among middle-aged veterans. Some veterans did not want people to know if they were experiencing a mental health problem, and when endorsed, intentions to seek help decreased for both STB and mental health. Thus,

improving this factor with future messaging may have cross-cutting benefits for this group of veterans. An interaction term for this attitude and age suggests nuanced differences within the targeted audience. Counter-attitudinal messages could be tailored toward refined segments such as younger veterans who were more likely to agree with it. A number of participants in our study also confirmed the stereotype that people with mental illness are dangerous, which is consistent with the psychosocial barriers reported among the larger veteran and general populations (Ben-Zeev, Corrigan, Britt, & Langford, 2012; Kulesza, Pedersen, Corrigan, & Marshall, 2015; Manderscheid et al., 2007; Vogt 2011; Vogt et al., 2014). These findings further underscore the need to identify and better characterize additional control factors related to help seeking to target messaging.

Finally, expert panel reports on suicide prevention recommend disseminating messages that highlight treatment works and that recovery is possible (Chambers et al., 2005; U.S. Department of Health and Human Services Office of the Surgeon General and National Action Alliance for Suicide Prevention, 2012). Our data suggest that this treatment belief is not only formed but is also saturated among veterans in midlife. Veterans may benefit more from the secondary diffusion of this attitude that promotes discussions surrounding treatment seeking to facilitate social influence and behavior change (Atkins & Salmon, 2010; Southwell & Yzer, 2009). Conversely, many participants in our study responded neutrally to attitude measures. This may represent a distinct segment among middle-aged veterans that have not yet formed strong opinions to tailor messages toward. Communication intervention that shape new attitudes among audiences may be more feasible/ achievable than those aimed at countering existing beliefs resistant to change (e.g., Ivanov et al., 2016). This may offer a potentially cost-effective strategy to stimulate positive population attitude shifts that warrant further investigation.

Limitations

This was a cross-sectional study that collected self-reported measures from a sample of veterans and does not permit for temporal relationships. General survey limitations are also potentially present including participation bias, self-reporting response that may produce recall or social desirability bias, and questionnaire/caller bias. The multistep empirical process for developing TPB questionnaires was not employed; thus, theoretical constructs were not fully captured as survey items did not explore all potential underlying attitudes/ beliefs that influence help-seeking intentions among veterans. Furthermore, intentions were broadly defined (e.g., no time frame), and findings may not hold true for narrowly defined behaviors (e.g., VA treatment seeking in the next 3 months). Future use of this broad measure of intent should also examine indicators for when one is “in need” of help to better understand why/how constructs influence behavior. This study did not measure actual (past/ current) behaviors. Additional research is needed to measure and test the relationship between intentions and behavior and assess whether the attitudes/beliefs from the current study are also predictive of behavior and/or differ by specific “calls to action” (e.g., broad vs. narrow behaviors). Analyses are restricted to veterans between the ages of 44 and 65 years, and participants were primarily White males. Findings may not be generalizable, and inferences cannot necessarily be drawn to the larger veteran populations or for specific subpopulations (e.g., by gender or race). However, population shifts over the next decade are

expected as younger veterans approach midlife, underscoring the value of such strategies for continued and future use. The majority of participants had recent VHA service use, and thus, findings may be unique to their experiences. However, nearly 6 million veterans utilized the VHA between 2014 and 2015 (VA, 2016b). Data to inform effective intervention design for this group still hold considerable consequence. Next steps could examine differences in responses between VA users and nonusers to better segment and tailor messaging. Finally, this study did not explore nor account for potential confounding from external variables such as diagnoses, suicidal behaviors, or current use of mental health or crisis services or exposure to related intervention or activities.

Conclusion

This study underscores the significant role control-related factors and larger social climates play in supporting help seeking for both suicidal behaviors and mental health more broadly. Findings reveal opportunities for communication intervention to improve intentions to seek help. Research to further assess TPB constructs should be prioritized as critical next steps to facilitate effective design and evaluation of suicide prevention messages targeting veterans in midlife.

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Table 1.

Characteristics of a National Random Sample of Veterans in Midlife by Intentions to Seek Help for Mental Health Concerns or Suicidal Thoughts and Behaviors, ^{a,b,c} U.S. December 2014 to September 2016 (*N* = 809).

Characteristic	Weighted % (<i>n</i>)	Help-seeking intentions: Mental health, <i>p</i> value ^a	Help-seeking intentions: Suicide, <i>p</i> value ^a
Age (years)		.02	.17
44–49	22.88 (172)		
50–55	25.68 (199)		
56–60	20.39 (159)		
60–65	31.05 (279)		
Sex (male)	83.77 (548)	.25	.58
Race		.98	.47
White	73.16 (585)		
Other (non-White)	26.84 (224)		
Ethnicity (Hispanic)	8.52 (65)	.17	.57
Combat-exposed during service (yes)	33.51 (252)	.17	.16
Health status in the past 30 days			
Physical health		.03	.19
Poor/fair	44.73 (368)		
Good/excellent	55.27 (441)		
Mental health		<.01	<.01
Poor/fair	33.39 (281)		
Good/excellent	66.61 (528)		
Functional limitations in the past 30 days			
Due to physical health (yes)	48.50 (404)	.30	.41
Due to mental health (yes)	22.97 (198)	.04	.01
Veterans Health Administration use in the past 12 months (yes)	75.63 (621)	.22	.70
Suicide-related communication with others (yes)	46.37 (383)	.50	.70

Note. Significant findings are bolded.

^a Bivariate analysis utilized three-level categorical dependent variables for intentions to seek help.

^b Survey data were collected from a national random sample of veterans of U.S. military service.

Analyses restricted to participants between 44 and 65 years old.

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Table 2.

Frequency Distributions of Theory of Planned Behavior Constructs Reported Among a National Random Sample of Veterans in Midlife,^{a,b,c} U.S. December 2014 to September 2016 ($N = 809$).

Theoretical construct	Strongly disagree, weighted % (<i>n</i>)	Disagree, weighted % (<i>n</i>)	Neither agree/disagree, weighted % (<i>n</i>)	Agree, weighted % (<i>n</i>)	Strongly agree, weighted, % (<i>n</i>)	Help-seeking intentions: Mental health, <i>p</i> value ^a	Help-seeking intentions: Suicide, <i>p</i> value ^a
Attitudes toward behavior							
Anyone can suffer from mental health concerns	1.48 (12)	1.28 (9)	3.30 (25)	12.23 (93)	81.70 (670)	<.01 ^d	<.01
Would not want others to know if experiencing mental health concerns	20.86 (180)	10.84 (88)	28.78 (226)	15.39 (126)	24.13 (189)	<.01	<.01
People with mental health concerns are a danger to others	19.44 (170)	16.72 (137)	33.42 (271)	17.56 (134)	12.86 (97)	<.01	.01
Treatment can help to lead normal lives	0.85 (6)	1.43 (13)	11.36 (99)	37.24 (293)	49.11 (398)	<.01 ^d	<.01 ^d
Injunctive norms							
People important to me would want me to seek help for a mental health concern	1.19 (11)	1.10 (10)	3.64 (30)	15.91 (130)	78.15 (628)	<.01	<.01
Descriptive norms							
People important to me would seek help themselves if experiencing a mental health concern	5.04 (51)	11.64 (101)	28.93 (242)	28.02 (219)	26.37 (196)	<.01	<.01
Only a small number of people with mental health concerns seek help	5.55 (41)	7.59 (57)	26.29 (209)	31.05 (246)	29.52 (256)	<.01	<.01
People are generally caring and sympathetic toward those with mental health concerns	10.84 (100)	20.31 (169)	38.03 (303)	20.33 (155)	10.48 (82)	<.01	<.01
Perceived behavioral control							
Help seeking would be easy for me	2.19 (20)	8.03 (65)	13.75 (113)	24.64 (198)	51.39 (413)	<.01	<.01
I am confident I could seek help if I wanted to	0.61 (6)	2.48 (22)	4.93 (41)	19.37 (157)	72.61 (583)	<.01 ^d	<.01 ^d
Intentions (raw distribution)							
If in need, how likely are you to seek treatment for suicidal thoughts, feeling or behaviors	2.27 (17)		2.76 (23)	16.84 (120)	15.83 (122)	62.30 (481)	5.69 (46)
If in need, how likely are you to seek treatment for mental health concerns	1.52 (14)		5.04 (36)	16.37 (118)	19.06 (149)	58.00 (447)	5.56 (45)

Intentions (collapsed categories)	Less likely, weighted % (n)	Likely, weighted % (n)	Extremely likely, weighted % (n)	Missing, weighted % (n) ^e
If in need, how likely are you to seek treatment for suicidal thoughts, feelings, or behaviors	21.87 (160)	15.83 (122)	62.30 (481)	5.69 (46)
If in need, how likely are you to seek treatment for mental health concerns	22.93 (168)	19.06 (149)	58.00 (447)	5.56 (45)

Note. Significant findings are bolded.

^a Bivariate analysis utilized three-level categorical dependent variables for intentions to seek help.

^b Survey data were collected from a national random sample of veterans of U.S. military service.

^c Analyses restricted to participants between 44 and 65 years old.

^d Monte Carlo method with 10,000 bootstraps.

^e Percent missing is calculated separately and not included in the summative percent for intentions.

Table 3.

Adjusted Associations of Theory of Planned Behavior Constructs With Intentions to Seek Help for Suicidal Thoughts and Behaviors Among a National Random Sample of Veterans in Midlife,^{a,b,c} U.S. December 2014 to September 2016 (*N* = 809).

Variable	Odds Ratio	95% Confidence Intervals [Lower Bound, Upper Bound]
Sex (male)	1.60	[1.08, 2.35]
Age	1.11	[0.96, 1.29]
Race (White)	1.51	[0.99, 2.29]
Ethnicity (Hispanic)	1.42	[0.80, 2.52]
Mental health (poor/fair)	0.67	[0.46, 0.96]
Attitudes toward behavior ^d : <i>Would not want others to know if experiencing mental health concerns</i>	0.72	[0.63, 0.81]
Descriptive norms ^d : <i>People important to me would seek help themselves if experiencing a mental health concern</i>	1.36	[1.16, 1.59]
Perceived behavioral control ^d : <i>Help seeking would be easy for me</i>	1.74	[1.45, 2.08]
Perceived behavioral control ^d : <i>I am confident I could seek help if I wanted to</i>	1.75	[1.32, 2.30]

Note. Significant findings are bolded.

^aReference category is “less likely” to seek help for all analyses.

^bSurvey data were collected from a national random sample of veterans of U.S. military service.

^cAnalyses restricted to participants between 44 and 65 years old.

^dStandardized estimates are provided for attitudes, norms, and self-efficacy (0, 1).

Table 4.

Adjusted Associations of Theory of Planned Behavior Constructs With Intentions to Seek Help for Mental Health Concerns Among a National Random Sample of Veterans in Midlife,^{a,b,c} U.S. December 2014 to September 2016 (*N* = 809).

Variable	Odds Ratio	95% Confidence Intervals [Lower Bound, Upper Bound]
Sex (male)	1.15	[0.82, 1.61]
Age	0.83	[0.49, 1.17]
Race (White)	1.10	[0.76, 1.61]
Ethnicity (Hispanic)	1.03	[0.58, 1.86]
Attitudes toward behavior ^d : <i>Would not want others to know if experiencing mental health concerns</i>	0.56	[0.27, 0.85]
Perceived behavioral control ^d : <i>Help seeking would be easy for me</i>	2.42	[2.05, 2.86]

Note. Significant findings are bolded.

^aReference category is “less likely” to seek help for all analyses.

^bSurvey data were collected from a national random sample of veterans of U.S. military service.

^cAnalyses restricted to participants between 44 and 65 years old.

^dStandardized estimates are provided for attitudes, norms, and self-efficacy (0, 1).