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Brief Report

Perceived Purpose in Life, Mental Health, and Suicidality in Older U.S. Military Veterans: Results From the National Health and Resilience in Veterans Study

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ABSTRACT

Objective: To determine the current prevalence of perceived purpose in life (PIL) and its association with screening positive for mental disorders and suicidality in a nationally representative sample of predominantly older U.S. veterans. **Methods:** Data were analyzed from the 2019–2020 National Health and Resilience in Veterans Study ($N = 4,069$; $M_{age} = 62.2$). Veterans were classified into three groups based on perceived PIL level (i.e., low, average, and high). Self-report assessments were administered to screen for mental disorders and suicidality. **Results:** Most veterans endorsed average PIL (71.7%), while 16.0% endorsed low PIL and 12.4% endorsed high PIL. A “dose-response” association was observed between PIL and outcomes. High PIL was associated with 42%–94% reduced odds of screening positive for major depressive, generalized anxiety, posttraumatic stress, and substance use disorders, as well as suicide attempts, ideation, and future intent. **Conclusion:** Higher PIL is associated with lower odds of mental disorders and suicidality in U.S. veterans, underscoring the potential importance of interventions to bolster PIL in this population. (Am J Geriatr Psychiatry 2022; ■■■:■■■–■■■)

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Highlights

- What is the primary question addressed by this study? What is the prevalence and potential mental health benefits of purpose in life in a nationally representative sample of older U.S. military veterans?
- What is the main finding of this study? In this cross-sectional study (N = 4,069), most veterans endorsed average purpose in life (71.7%), while 16.0% endorsed low purpose in life and 12.4% endorsed high purpose in life. High purpose in life was associated with 42%–94% reduced odds of screening positive for major depressive, generalized anxiety, posttraumatic stress, and substance use disorders, as well as suicide attempts, ideation, and future intent.
- What is the meaning of the finding? Given the “dose-response” relationship found between purpose in life and a broad range of mental health outcomes, purpose in life may be an important transdiagnostic prevention and treatment target.

INTRODUCTION

Perceived purpose in life (PIL) refers to the extent to which a person’s life is motivated by personally-valued goals and life aims.¹ It is theorized to facilitate adaptive adjustment to stressful life events and promote better overall health and well-being. PIL has been linked to reduced risk of incident physical disability,² and meta-analyses have demonstrated that higher levels of PIL are linked to reduced risk of cardiovascular events, dementia, and all-cause mortality.^{3,4} PIL has also been shown to be inversely associated with numerous indicators of distress,⁵ and there is evidence that PIL can reduce the risk of relapse in people with a history of alcohol use disorder.⁶

Despite this relatively robust literature, however, many of the existing studies examining the potential benefits of PIL on mental health have relied on single indicators of distress (e.g., depressive symptoms) and the use of convenience samples instead of population-based samples. Elucidation of how PIL relates to a broad range of mental disorders and measures of suicide risk in representative samples could provide insight into whether PIL may serve as a target for population-based prevention and treatment efforts for specific clinical outcomes.

To address these gaps, we conducted an exploratory cross-sectional study to evaluate the following two aims: 1) examine the current prevalence of PIL (i.e., low, average, and high) in a nationally

representative sample of predominantly older U.S. military veterans; and 2) quantify the extent to which these different levels of PIL are associated with screening positive for various mental disorders (i.e., major depressive disorder: MDD; generalized anxiety disorder: GAD; posttraumatic stress disorder: PTSD; alcohol use disorder: AUD; drug use disorder: DUD; and measures of suicidality: past suicide attempts, current suicidal ideation, future suicidal intent). Veterans are an ideal population in which to evaluate these aims given that the majority of veterans are entering into older adulthood when a lack of PIL may be more strongly associated with distress.⁷ Veterans also have higher rates of mental disorders relative to their civilian counterparts, and there is an impetus to develop and enhance targeted psychiatric interventions for this population.

METHODS**Sample**

Data were drawn from the National Health and Resilience in Veterans Study (NHRVS), a nationally representative survey of 4,069 U.S. veterans, the majority of whom were 60 years and older. The NHRVS was administered between November 18, 2019 and March 8, 2020 (median completion date: November 21, 2019) and all participants completed an anonymous, 50-minute, web-based survey. The NHRVS sample was taken from KnowledgePanel, a research panel maintained by the survey research

firm Ipsos, which maintains more than 50,000 households. KnowledgePanel is an online, probability-based, non-volunteer access survey panel of U.S. adults that covers approximately 98% of U.S. households. Panel members are recruited through national random samples, originally by telephone but now almost exclusively by postal mail. KnowledgePanel recruitment uses dual sampling frames that include both listed and unlisted telephone numbers, telephone and nontelephone households, and cell-phone-only households, as well as households with and without Internet access. To permit generalizability of study results to the entire population of U.S. veterans, the Ipsos statistical team computed post-stratification weights using the following benchmark distributions of U.S. military veterans from the most recent (August 2019) Current Veteran Population Supplemental Survey of the U.S. Census Bureau's American Community Survey: age, gender, race/ethnicity, Census region, metropolitan status, education, annual household income, branch of military service, and years of military service. An iterative proportional fitting (raking) procedure was used to produce the final post-stratification weights. All participants provided informed consent and the study was approved by the Human Subjects Committee of the VA Connecticut Healthcare System.

Perceived Purpose in Life

Perceived purpose in life (PIL) was assessed using the four-item Purpose in Life Test-Short Form (PIL-SF; see Supplemental Table 1). Items are assessed using a seven-point Likert-type scale and total scores range from 4 to 28 (Cronbach's $\alpha = 0.89$). Given that PIL-SF scores were negatively skewed and non-normally distributed (Kolmogorov-Smirnov test statistic = 0.102, $p < 0.001$) and to create qualitatively distinct groups on the basis of PIL level, veterans were classified as having low PIL (≤ 1 standard deviation [SD] lower than sample mean), average PIL (≥ -1 SD and $< +1$ SD of the sample mean), or high PIL (≥ 1 SD higher than the sample mean).

Correlates of PIL

Supplemental Table 1 describes variables examined in relation to PIL.

Data Analysis

Data analyses proceeded in three steps. First, Pearson's chi-square tests and one-way analyses of variance (ANOVAs) were conducted to determine whether sociodemographic and military variables differed by level of perceived purpose in life (PIL). Second, chi-square tests were conducted to assess associations between level of PIL, and positive screens for various mental disorders and indicators of suicide risk. Bonferroni-corrected pairwise contrasts were computed to compare prevalence by level of PIL. Third, a series of multivariable binary logistic regression analyses adjusted for known correlates of mental disorders and suicide risk was then conducted to evaluate whether level of PIL was independently associated with these measures. Given the conservative adjustment of potentially confounding variables in these analyses, associations with $p < 0.05$ were considered statistically significant.

RESULTS

On average, participants in the NHRVS were in their early 60s ($M_{\text{age}} = 62.2$ years; $SD = 15.7$; range = 22–99). The majority of participants were male ($N = 3,564$, weighted 90.2%) and the remainder were female ($N = 505$, weighted 9.8%). The majority identified as non-Hispanic White ($N = 3,318$, weighted 78.1%), with the remainder identifying as either non-Hispanic Black ($N = 296$, weighted 11.2%), Hispanic ($N = 307$, weighted 6.6%), or non-Hispanic other race ($N = 51$, weighted 2.7%) or non-Hispanic 2+ races ($N = 97$, weighted 1.4%). Most participants endorsed average levels of perceived purpose in life (PIL; $N = 3,019$, 71.7%; mean score = 22.0, $SD = 2.7$, range = 17–26), while 580 ($N = 580$, 16.0%; mean score = 12.7, $SD = 3.2$, range = 4–16) endorsed low PIL and 470 ($N = 470$, 12.4%; mean score = 27.5, $SD = 0.5$, range = 27–28) endorsed high PIL.

As shown in Supplemental Table 2, relative to the low PIL group, veterans who endorsed high PIL were more likely to be older and more likely to be male, have served in the military for 10 or more years, and have an annual household income greater than \$60,000.

Table 1 shows the current prevalence of mental disorders as a function of PIL level and results of

TABLE 1. Bivariate and Multivariate Analyses of Mental Health and Suicidality Measures by Level of Perceived Purpose in Life in U.S. Military Veterans

	Perceived Purpose in Life Level			Bivariate Analyses		Multivariable Analyses			Wald Statistic (p)
	Low N = 580 Weighted 16.0% 1	Average N = 3,019 Weighted 71.7% 2	High N = 470 Weighted 12.4% 3	χ^2	Pairwise Contrasts	Average Versus Low OR (95%CI)	High Versus Low OR (95%CI)	High Versus Average OR (95%CI)	
Positive screen for MDD ^a	170 (31.2%)	119 (5.1%)	3 (1.4%)	484.63	1>2>3	0.16 (0.12-0.20)***	0.06 (0.03-0.12)***	0.34 (0.16-0.74)**	215.47 (<.001)
Positive screen for GAD ^b	118 (26.0%)	108 (4.6%)	6 (3.8%)	343.13	1>2,3	0.20 (0.15-0.26)***	0.23 (0.14-0.39)***	1.21 (0.72-2.04)	135.32 (<.001)
Positive screen for PTSD ^c	94 (18.5%)	115 (4.5%)	10 (3.2%)	179.96	1>2,3	0.31 (0.23-0.42)***	0.34 (0.19-0.60)***	1.11 (0.64-1.94)	59.20 (<.001)
Positive screen for AUD ^d	87 (16.9%)	252 (10.1%)	21 (4.2%)	49.78	1>2>3	0.75 (0.58-0.98)*	0.32 (0.20-0.54)***	0.45 (0.29-0.72)***	19.13 (<.001)
Positive screen for DUD ^e	86 (17.9%)	208 (8.6%)	20 (4.3%)	66.85	1>2>3	0.83 (0.63-1.09)	0.49 (0.29-0.82)**	0.58 (0.36-0.93)*	7.39 (.025)
Suicidal ideation ^f	158 (32.5%)	222 (8.9%)	7 (2.2%)	329.36	1>2>3	0.30 (0.23-0.39)***	0.10 (0.05-0.18)***	0.33 (0.18-0.62)***	136.72 (<.001)
Suicide attempt ^f	54 (10.3%)	77 (3.0%)	5 (1.2%)	85.79	1>2,3	0.62 (0.42-0.90)*	0.40 (0.16-0.99)	0.64 (0.26-1.55)	12.23 (.002)
Future suicidal intent ^f	29 (5.5%)	18 (0.7%)	2 (0.2%)	96.84	1>2,3	0.21 (0.12-0.39)***	0.09 (0.01-0.77)*	0.51 (0.06-4.57)	34.17 (<.001)

^a Patient Health Questionnaire-2 (PHQ-2).

^b Generalized Anxiety Disorder-2 (GAD-2).

^c PTSD Checklist for DSM-5 (PCL-5).

^d Alcohol Use Disorders Identification Test (AUDIT).

^e Screen of Drug Use.

^f Suicide Behaviors Questionnaire-Revised (SBQ-R).

Note. OR: odds ratio; 95%CI = 95% confidence interval; MDD: major depressive disorder; GAD: generalized anxiety disorder; PTSD: posttraumatic stress disorder; AUD: alcohol use disorder; DUD: drug use disorder, All bivariate analyses are significant at $p < 0.001$. All Wald chi-square statistics have two degrees of freedom., Statistically significant association:

* $p < 0.05$.

** $p < 0.01$.

*** $p < 0.001$.

Multivariable analyses are adjusted for age, sex, race/ethnicity, education, marital/partnered status, household income, combat veteran status, adverse childhood experiences, and cumulative lifetime traumas. Analyses of suicidality variables are additionally adjusted for lifetime major depressive, posttraumatic stress, and alcohol and drug use disorders.

regression analyses. Relative to the low PIL group, the average and high PIL groups were less likely to screen positive for all mental disorders and indicators of suicide risk. Moreover, a “dose-response” association was observed for several of these outcomes, with a declining prevalence of positive screens for MDD, AUD, DUD, and suicidal ideation as a function of increasing PIL.

Regression analyses adjusted for known correlates of mental disorders and suicide risk revealed that, relative to the low PIL group, the average PIL group had 25%–84% lower odds of positive screens for all current mental disorders except DUD, as well as all indicators of suicide risk. The high PIL group had 51%–94% lower odds of positive screens for all current mental disorders and all assessed measures of suicidality. Relative to the average PIL group, the high PIL group also had 42%–67% lower odds of screening positive for current MDD, AUD, DUD, and suicidal ideation.

DISCUSSION

To our knowledge, this study is the first to characterize the current prevalence and mental health correlates of perceived purpose in life (PIL) in a nationally representative sample of predominantly older US military veterans. While the majority of veterans endorsed average (71.7%) or high (12.4%) levels of PIL, a significant minority (16.0%) reported low PIL. Consistent with previous research,⁸ veterans who were female, non-Hispanic White, unmarried/partnered, less educated, and reported a lower income were more likely to endorse low PIL. Further, age was positively associated with PIL level, which accords with a prior population-based study of more than 4,800 adults.⁹ However, there is also evidence that PIL may decline with age,^{7,8} be nonlinearly associated with age,¹⁰ and that men may experience slower age-related declines in PIL relative to women.⁵ Unexamined veteran cohort differences (e.g., unique war-time experiences; postdeployment social support) may have also partly influenced this finding. Further research is needed to better understand the association between age and PIL in veterans and other populations at increased risk for adverse mental health outcomes.

Notably, low levels of PIL were strongly linked to higher odds of screening positive for various mental disorders and measures of suicidality, even after adjusting for a broad range of known risk factors for these outcomes. Our findings indicate that low PIL is most strongly linked to mental health problems characterized by anhedonia, hopelessness, and loss, such as MDD and suicidal ideation. They further suggest that higher levels of PIL may help mitigate risk for these measures, though longitudinal studies are needed to disentangle directional/causal associations.

Several biopsychosocial mechanisms may underlie the link between PIL and mental health outcomes. For example, clinically significant symptoms of mental disorders can develop in the aftermath of stressful or traumatic life events, and such events can threaten important beliefs (e.g., sense of control) and goals. Individuals who have clearly defined goals and life aims that are in line with their values (i.e., higher PIL) may be better able to adjust their goals when such events compromise existing pursuits, ultimately promoting resilience.¹ This, in turn, could help maintain perceptions of control that help reduce the likelihood of developing chronic distress. PIL may also promote adaptive coping by lowering physiological arousal and supporting effective stress regulation.² Indeed, individuals with high levels of PIL have been found to experience smaller increases in negative affect on stressful days than those who report low levels of PIL.¹¹ PIL may also protect against the development of heightened distress indirectly through the promotion of healthy behaviors like physical exercise, which has been linked to better mood and overall well-being.⁵ However, clinically significant symptoms of distress and substance use problems may also lead to an erosion of PIL. For example, feeling hopeless about the future or having difficulty getting motivated for basic tasks could make it difficult to move toward valued goals in one's life. Moreover, high levels of irritability or interpersonal isolation may lead to a reduction in the frequency of social interactions, which is known to bolster PIL.⁷ Longitudinal studies are needed to disentangle directional associations between PIL and measures of mental health.

Results of this study suggest that existing interventions that have been shown to increase PIL¹² may

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have the potential to help mitigate risk for, and alleviate symptoms of, various mental disorders. One area that may benefit from advances in this area is the treatment and prevention of suicide risk. In light of accumulating evidence suggesting that existing treatments for depression may not be effective enough in reducing suicidality,¹³ it would be useful to examine whether interventions that bolster PIL might also help reduce suicide risk in various populations.

This study is not without limitations. First, results are restricted to mostly older, male US veterans, and an exploratory, cross-sectional design was used. Consequently, findings may not generalize to more diverse sociodemographic subgroups of veterans, and we cannot determine directionality or make inferences about causal associations between PIL and mental health measures. Second, we utilized a brief 4-item measure to assess perceived PIL, which may be influenced by other factors (e.g., positive affect).¹⁴ Third, we identified levels of PIL on the basis of ± 1 SD cut-offs on the PIL-SF, which is sample and distribution-specific, and may not generalize to other samples that may have different distributions of PIL-SF scores. Nevertheless, the score ranges for each of these groups may be used to define comparable levels of PIL in future work. Additional research is also needed to examine the consistency of the associations between PIL and mental health outcomes over time; identify biopsychosocial mechanisms underlying these associations; and evaluate the efficacy of interventions designed to increase PIL in preventing and treating mental disorders in veterans and other high-risk populations.

AUTHOR CONTRIBUTIONS

ICF drafted primary manuscript, conceived of study aims, and contributed to interpretation of findings. RHP acquired the data, conceived of study aims, conducted the statistical analyses, interpreted the data, and edited the manuscript. All authors contributed and approved of the final manuscript.

DATA STATEMENT

The U.S. Department of Veterans Affairs National Center for PTSD, which supported preparation of this report, had no role in the design, analysis, or interpretation of this study. The data have not been previously presented orally or by poster at scientific meetings.

DISCLOSURE

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SUPPLEMENTARY MATERIALS

Supplementary material associated with this article can be found, in the online version, at <https://doi.org/10.1016/j.jagp.2022.09.010>.

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