



THE JOURNAL OF CLINICAL PSYCHIATRY

THE OFFICIAL JOURNAL OF THE AMERICAN SOCIETY OF CLINICAL PSYCHOPHARMACOLOGY

Supplementary Material

Brief Report Title: Factors Associated With Remission of Suicidal Ideation During the COVID-19 Pandemic: A Population-Based, Longitudinal Study in US Military Veterans

Authors: Sarah Herzog, PhD; Brandon Nichter, PhD; Melanie L. Hill, PhD; Peter J. Na, MD; Sonya B. Norman, PhD; and Robert H. Pietrzak, PhD

DOI Number: 10.4088/JCP.21br14341

List of Supplementary Material for the brief report

1. [Table 1](#)
2. [References](#)

Disclaimer

This Supplementary Material has been provided by the author(s) as an enhancement to the published article. It has been approved by peer review; however, it has undergone neither editing nor formatting by in-house editorial staff. The material is presented in the manner supplied by the author.

Supplementary Table 1. *Study Measures (With Reference List)*

Suicidal behaviors

Past-year suicidal ideation Past-year SI was assessed at pre-pandemic and peri-pandemic waves via endorsement of Item 2 of the Suicide Behaviors Questionnaire-Revised (SBQ-R)^[1]: “How often have you thought about killing yourself in the past year?” Response options range from ‘rarely’ (1 time) to ‘very often’ (5+ times).

Past-year suicide plan and attempt Past-year suicide plan or attempt was assessed at the peri-pandemic assessment via endorsement of Item 1 of the SBQ-R^[1]: “In the past year, have you ever thought about or attempted to kill yourself?” Response options indicating suicide plan or attempt included: “I have had a plan at least once to kill myself but did not try to do it,” “I have had a plan at least once to kill myself and really wanted to die,” “I have attempted to kill myself, but did not want to die,” and “I have attempted to kill myself, and really hoped to die.”

Sociodemographic characteristics

The following characteristics were assessed: age (continuous), sex (male/female), race/ethnicity (white/non-white), education (college graduate or higher, up to high school diploma), marital status (married or living with partner/not partnered), household income (less than \$60,000/\$60,000 or more), combat veteran status, years of military service.

Pre-pandemic risk factors

Adverse childhood experiences Adverse Childhood Experiences Questionnaire total score^[2].

Number of lifetime potential traumas Life Events Checklist for DSM-5 total score^[3].

Current PTSD and/or MDD A score of ≥ 33 on PTSD Checklist for DSM-5^[4], which assesses PTSD symptoms in relation to the “worst” Criterion A trauma on the LEC-5, indicated probable present of PTSD. Current MDD was screened for using the Patient Health Questionnaire-2^[5]. Veterans who met screening criteria for either disorder were coded positive for current PTSD/MDD.

Current Generalized Anxiety Disorder	Current generalized anxiety was screened for using the Patient Health Questionnaire-4 ^[6] .
Current AUD and/or DUD	Current AUD/DUD was assessed using the Alcohol Use Disorders Identification Test (AUDIT) ^[7] and Screen of Drug Use ^[8] . A score ≥ 8 ($\alpha=0.85$) is indicative of probable current AUD ^[9] . A response of ≥ 7 days to the question, “how many days in the past 12 months have you used drugs other than alcohol,” or ≥ 2 days to the question, “how many days in the past 12 months have you used drugs more than you meant to,” was classified as a positive DUD screen. A positive screen for either disorder was coded positive for current AUD/DUD.
Loneliness	UCLA Loneliness Scale total score ^[10] .
Suicide attempt history	Endorsement of either of two responses to Item 2 of the Suicide Behaviors Questionnaire-Revised (SBQ-R) ^[11] : “I have attempted to kill myself, but did not want to die,” or “I have attempted to kill myself, and really hoped to die.”
Current mental health treatment	Endorsement of current receipt of psychotropic medication and/or psychotherapy or counseling.
Cognitive functioning	Medical Outcomes Study Cognitive Functioning Scale ^[11] .
Trait impulsivity	Barratt Impulsiveness Scale-Brief ^[12] total score.
Physical health difficulties	Factor score comprised of 1) the sum of medical conditions in response to the question, “has a doctor or healthcare professional ever told you that you have any of the following medical conditions: arthritis, cancer, etc.,” 2) score on Brief Symptom Inventory-Somatization subscale ^[13] , and 3) endorsement of disability with activities of daily living and instrumental activities of daily living.
Social network size	Response to the following question: “About how many close friends and relatives do you have (people you feel at ease with and can talk to about what is on your mind)?”
Perceived social support	Medical Outcome Study Social Support Scale-5 ^[14] .

Religion/spirituality

Factor score containing scores from the Duke University Religion Index^[15].

Adaptive psychosocial traits

A composite score of adaptive psychosocial traits^[16-17] was used to assess dispositional attitudes and capacities for coping that are associated with more positive mental health outcomes, including qualities such as resilience; a sense of life purpose; dispositional gratitude, optimism, and curiosity/exploration; and perceived community integration. Resilience was measured using the Connor-Davidson Resilience Scale^[18], a 10-item scale with items such as “I am able to adapt when changes occur,” measured on a scale from 1 (“not at all”) to 5 (“nearly true all the time”); The Purpose in Life Test, Short Form^[19], a 4-item scale, was used to index sense of meaning and purposefulness in life, assessed on a scale from 1 (“no goals/purpose/progress/meaning”) to 7 (“very clear goals/purpose/progress/meaning”);). Dispositional gratitude, optimism, and curiosity were each assessed using single 7-point Likert scale items adapted from the Gratitude Questionnaire (GQ-6)^[20] the Life Orientation Test-Revised (LOTS-R)^[21], and the Curiosity and Exploration Inventory-II (CEI-II0)^[22] respectively. Sense of community integration and acceptance was assessed with a single item, “I feel well integrated in my community.”

Pandemic-related Factors

COVID-19 infection stressors

Endorsement of personal prior COVID-19 infection or someone in the household or outside the household who contracted COVID-19 or knowing someone who died of COVID-19, on a COVID-19 exposure measure developed by the National Center for PTSD.

COVID-19 pandemic stressors

Coronavirus Health Impact Survey (CRISIS)^[23], which assessed for COVID-19-related disease worries, social restriction stress, financial stress, and relationship difficulties during the pandemic. The CRISIS has been psychometrically validated to have high reliability and construct validity.

Potentially traumatic events during pandemic	Count of potentially traumatic events in the past year assessed using the Life Events Checklist for DSM-5 ^[3] .
COVID-19 related PTSD symptoms	Score on a 4-item measure of COVID-19 pandemic-related PTSD symptoms.
Change in psychosocial risk factors from pre- to peri-pandemic	Pre- to peri-pandemic changes in severity of MDD/GAD/PTSD symptoms, loneliness, adaptive psychosocial traits, and perceived social support.

Abbreviations: ADL, activities of daily living; AUD, alcohol use disorder; AUDIT, Alcohol Use Disorders Identification Test; COVID-19, coronavirus disease 2019; DUD, drug use disorder; MDD, Major depressive disorder; PTSD, Posttraumatic stress disorder.

See next page for references.

References

- [1] Osman, A., Bagge, C. L., Gutierrez, P. M., Konick, L. C., Kopper, B. A., & Barrios, F. X. (2001). The Suicidal Behaviors Questionnaire-Revised (SBQ-R): validation with clinical and nonclinical samples. *Assessment, 8*(4), 443-454. doi: 10.1177/107319110100800409
- [2] Zarse, E. M., Neff, M. R., Yoder, R., Hulvershorn, L., Chambers, J. E., & Chambers, R. A. (2019). The adverse childhood experiences questionnaire: two decades of research on childhood trauma as a primary cause of adult mental illness, addiction, and medical diseases. *Cogent Medicine, 6*(1), 1581447.
- [3] Gray, M. J., Litz, B. T., Hsu, J. L., & Lombardo, T. W. (2004). Psychometric properties of the life events checklist. *Assessment, 11*(4), 330-341. doi: 10.1177/1073191104269954
- [4] Weathers, F., Litz, B., Keane, T., Palmieri, P., Marx, B., & Schnurr, P. (2013). The PTSD Checklist for DSM-5 (PCL-5). *Scale available at from the National Center for PTSD at <http://www.ptsd.va.gov>.*
- [5] Kroenke, K., & Spitzer, R. L. (2002). The PHQ-9: A new depression diagnostic and severity measure. *Psychiatric Annals, 32*(9), 509-515.
- [6] Kroenke, K., Spitzer, R. L., Williams, J. B., & Löwe, B. (2009). An ultra-brief screening scale for anxiety and depression: The PHQ-4. *Psychosomatics, 50*(6), 613-621. doi: 10.1016/S0033-3182(09)70864-3
- [7] Bush, K., Kivlahan, D. R., McDonell, M. B., Fihn, S. D., & Bradley, K. A. (1998). The AUDIT alcohol consumption questions (AUDIT-C): an effective brief screening test for problem drinking. *Archives of Internal Medicine, 158*(16), 1789-1795.
- [8] Tiet, Q. Q., Leyva, Y. E., Moos, R. H., Frayne, S. M., Osterberg, L., & Smith, B. (2015). Screen of drug use: diagnostic accuracy of a new brief tool for primary care. *JAMA Internal Medicine, 175*(8), 1371-1377.
- [9] Saunders, J. B., Aasland, O. G., Babor, T. F., De la Fuente, J. R., & Grant, M. (1993). Development of the alcohol use disorders identification test (AUDIT): WHO collaborative project on early detection of persons with harmful alcohol consumption-II. *Addiction, 88*(6), 791-804.
- [10] Russell, D. W. (1996). UCLA Loneliness Scale (Version 3): Reliability, validity, and factor structure. *Journal of Personality Assessment, 66*(1), 20-40.

- [11] Yaras, A., White, M., & Bjorner, J. (2013). The development and validation of a revised version of the Medical Outcomes Study Cognitive Functioning Scale (Mos-Cog-R). *Value in Health, 16*(3), A33-A34.
- [12] Steinberg, L., Sharp, C., Stanford, M. S., & Tharp, A. T. (2013). New tricks for an old measure: The development of the Barratt Impulsiveness Scale–Brief (BIS-Brief). *Psychological Assessment, 25*(1), 216. doi: 10.1037/a0030550
- [13] Derogatis, L. R., & Spencer, P. (1993). *Brief Symptom Inventory: BSI*. Upper Saddle River, NJ, USA: Pearson
- [14] Giangrasso, B., & Casale, S. (2014). Psychometric properties of the medical outcome study social support survey with a general population sample of undergraduate students. *Social Indicators Research, 116*(1), 185-197.
- [15] Koenig, H. G., & Büssing, A. (2010). The Duke University Religion Index (DUREL): a five-item measure for use in epidemiological studies. *Religions, 1*(1), 78-85.
- [16] Pietrzak, R. H., & Cook, J. M. (2013). Psychological resilience in older US veterans: results from the national health and resilience in veterans study. *Depression and Anxiety, 30*(5), 432-443. doi: 10.1002/da.22083
- [17] Smith, N. B., Mota, N., Tsai, J., Monteith, L., Harpaz-Rotem, I., Southwick, S. M., & Pietrzak, R. H. (2016). Nature and determinants of suicidal ideation among US veterans: Results from the national health and resilience in veterans study. *Journal of Affective Disorders, 197*, 66-73. doi: 10.1016/j.jad.2016.02.069
- [18] Campbell-Sills, L., & Stein, M. B. (2007). Psychometric analysis and refinement of the connor–davidson resilience scale (CD-RISC): Validation of a 10-item measure of resilience. *Journal of Traumatic Stress, 20*(6), 1019-1028. doi: 10.1002/jts.20271
- [19] Schulenberg, S. E., Schnetzer, L. W., & Buchanan, E. M. (2011). The purpose in life test–short form: development and psychometric support. *Journal of Happiness Studies, 12*(5), 861-876. doi: 10.1007/s10902-010-9231-9
- [20] McCullough, M. E., Emmons, R. A., & Tsang, J.-A. (2001). The gratitude questionnaire–six item form (GQ-6). Retrieved April, 16, 2010. doi: 10.13072/midss.561
- [21] Glaesmer, H., Rief, W., Martin, A., Mewes, R., Brähler, E., Zenger, M., & Hinz, A. (2012). Psychometric properties and population-based norms of the Life Orientation Test Revised

(LOT-R). *British Journal of Health Psychology* 17(2), 432-445. doi: 10.1111/j.2044-8287.2011.02046.x

[22] Kashdan, T. B., Gallagher, M. W., Silvia, P. J., Winterstein, B. P., Breen, W. E., Terhar, D., & Steger, M. F. (2009). The curiosity and exploration inventory-II: Development, factor structure, and psychometrics. *Journal of Research in Personality*, 43(6), 987-998. doi: 10.1016/j.jrp.2009.04.011

[23] Nikolaidis, A., Paksarian, D., Alexander, L., Derosa, J., Dunn, J., Nielson, D. M., . . . Bromet, E. (2021). The Coronavirus Health and Impact Survey (CRISIS) reveals reproducible correlates of pandemic-related mood states across the Atlantic. *Scientific Reports*, 11(1), 1-13.