

This is an Accepted Manuscript for *International Psychogeriatrics* as part of the Cambridge Coronavirus Collection.

DOI: 10.1017/S1041610223000285

## **Subjective Cognitive Difficulties May Communicate More Than Forgetfulness**

Gabriella Imbriano<sup>1,\*</sup>, Ph.D. and Sherry A. Beaudreau<sup>1</sup>, Ph.D.

<sup>1</sup>Sierra Pacific Mental Illness Research Education and Clinical Centers, VA Palo Alto Health Care System, Palo Alto, CA, United States and the Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, Stanford, CA, United States

**\*Corresponding author:** Gabriella Imbriano, VA Palo Alto Health Care System/Stanford University School of Medicine, 151Y/MIRECC (Psychiatry), 3801 Miranda Ave, Palo Alto, CA 94304, USA. Email: [gabriella.imbriano@va.gov](mailto:gabriella.imbriano@va.gov)

### **Conflict of interest**

None.

### **Description of authors' roles**

The authors, Gabriella Imbriano and Sherry Beaudreau, contributed to the manuscript, revision process, and approval of the submitted version.

Commentary on “Subjective Cognitive Difficulties and Posttraumatic Stress Disorder Interact to Increase Suicide Risk Among Older U.S. Military Veterans” by *Cations et al.*

“Suicide is a complex problem with no single cause and no single solution,” according to a recent United States (U.S.) White House report (2022). This statement aptly captures the challenge of addressing the global suicide public health crisis, and is especially true for middle-aged and older adults, a key demographic at risk for suicide. Within the older age demographic, military Veterans in the U.S. have been identified as a high-risk group for suicide deaths, and yet, have been much less the focus of suicide prevention research (Sullivan *et al.*, 2022). Indeed, Veterans are at a higher risk for suicide than their civilian counterparts (Blow *et al.*, 2012; Kuehn, 2009); and, of those Veterans that die by suicide, more than half are aged 55 and older (U.S. Department of Veterans Affairs, Office of Mental Health and Suicide Prevention, 2022). The Veterans Health Administration (VHA) is committed to this public health priority and has made suicide prevention central to its mission in delivering high quality health care to Veterans of all ages. Of note, the empirical literature has identified posttraumatic stress disorder (PTSD) as a crucial risk factor for suicidality in Veteran populations (Pompili *et al.*, 2013). In addition, trauma exposure has been shown to be a risk factor for endorsing subjective cognitive difficulties (SCD) (Kennedy *et al.*, 2001). These SCD have been more consistently associated with psychological distress and poorer well-being than objective cognitive decline (Sheffler *et al.*, 2022). Given the potential of SCD as marker of heightened psychological distress, delineating the role of SCD in addition to having current PTSD could further improve models to predict suicide risk in middle-aged and older populations.

To determine the role of these important risk factors, Cations and colleagues (2023) investigated SCD, PTSD, and their interaction to predict suicidal ideation and suicidal intent. Their work focused on a population of Veterans aged 50- to 99-years old to assess contributing risk factors for suicide in this higher risk group. Using a nationally representative sample of 3602 Veterans enrolled in the 2019-2020 National Health and Resilience in Veterans Study, the authors assessed whether SCD, based on a self-report measure of six cognitive domains, and the presence of PTSD were associated with recent suicidal ideation or current suicidal intent. Results from this cross-sectional investigation found that those with overall SCD were more likely to endorse the presence of suicidal ideation in the past two weeks and were more likely to endorse

current suicidal intent. In secondary analyses for specific cognitive domains of SCD, it was found that difficulties with concentration and thinking were predictive of suicidal ideation and predictive of suicidal intent. In contrast, SCD for executive dysfunction were uniquely associated with suicidal ideation but not suicidal intent, and SCD for memory were uniquely associated with suicidal intent but not suicidal ideation. Taken together, this study delineates both overlapping SCD for suicidal ideation and suicidal intent (i.e., SCD overall and for concentration and thinking) and distinct SCD for suicidal ideation (i.e., executive dysfunction) and suicidal intent (i.e., memory). Given the acuity of suicidal intent as a risk factor for suicidal behaviors, this finding raises important considerations for clinical follow up of self-report of memory problems in middle-aged and older Veterans with PTSD. As noted by the authors, further replication of these findings is needed given only one percent of Veterans in the current sample endorsed suicidal intent. Nevertheless, if replicated in other samples, self-reported memory impairment in similar middle-aged and older populations might serve as a useful indicator for further suicide risk assessment in clinical contexts.

This study contributes to the empirical literature on late life suicide in several important ways. First, it clarifies how PTSD and SCD might operate in association with varying levels of suicide risk, i.e., suicidal thinking and suicidal intent. Second, this novel inquiry is also among the first to examine both of these risk factors within the same study, and to do so with a middle-aged and older Veteran population. Indeed, the current study also corroborates previous findings of PTSD as risk factor for suicide (Cations *et al.*, 2023). For example, as reported by Pompili and colleagues (2013), Veterans with PTSD symptoms are at increased risk for suicidal ideation and suicide mortality, though less is known about what underlies this association. Some research has suggested that depression and internal hostility arising from emotion coping dysregulation contributes to the association between PTSD and suicide risk (McKinney *et al.*, 2017). Others have suggested guilt, particularly in combat veterans, may impact the association between PTSD and suicide risk (Sher *et al.*, 2012). For example, Hendin and Haas has shown that among Vietnam combat Veterans with PTSD, the most significant predictor of suicidal ideation and suicidal attempts was the presence of combat-related guilt (1991). Thus, the addition of other psychological factors commonly co-occurring in PTSD, such as guilt, could increase the specificity of PTSD as a predictor of suicide risk.

Work by Cations and colleagues (2023) also extends the scope of current work on SCD as an important clinical indicator for intervention avenues. Although self-reported SCD has not always been as strong of a predictor of future cognitive impairment and cognitive decline (Truong *et al.*, 2022), it may signal increased suicide risk and subsequent need for suicide risk assessment in older Veterans as the current study suggests. As reported by Sheffler and colleagues (2022), SCD were associated with increased endorsement of various psychological sequelae such as anxiety, depression, and stress, which suggests that SCD may be a more potent indicator of diffuse problems in well-being as opposed to a direct marker of cognitive decline. The authors of current study propose that one mechanism by which SCD influences suicidal ideation and suicidal intent may be via negative cognitions pertaining to perceived, impending challenges to one's cognitive ability that will impact one's freedom and quality of life. While the unique and shared contributions of SCD and PTSD to suicidality are continuing to be clarified, the current study begins to synthesize these two parallel bodies of literature.

Further, the authors posit that interventions that address both SCD and PTSD may help decrease suicide risk in later life. To date, the scientific literature suggests that evidence-based psychological treatments for PTSD can have a beneficial effect of reducing suicidal ideation (Cox *et al.*, 2016), but this assumption is limited by the exclusion of adults with more acute suicidal ideation and suicide intent from randomized controlled trials of trauma interventions (Ronconi *et al.*, 2014). Even less is known about the efficacy of evidence-based treatments for PTSD when SCD is present, which represents a critical gap in the intervention literature. Future research should aim to understand not only if evidence-based treatments for PTSD change negative perceptions of one's cognitive abilities, but also if those perceptions about SCD moderate therapeutic outcomes for PTSD and suicidality.

Additionally, while SCD and objective cognitive impairment are not necessarily correlated, these two issues are more likely to co-occur in the presence of PTSD. Adults with PTSD are more susceptible to cognitive dysfunction earlier in life compared with non-trauma-exposed same aged peers without PTSD (Clouston *et al.*, 2017). This increased risk of cognitive impairment in PTSD is critical because it also increases the risk of fatal and non-fatal suicide attempts in older adults. In a recent study, Günak and colleagues (2021) found that adults aged 50 and older with a recent diagnosis of mild cognitive impairment or dementia were at significantly higher risk for attempting suicide than older adults without either cognitive

diagnosis. Consequently, whether objective cognitive impairment and SCD in PTSD are additive or interactive risk factors for suicide risk deserves further consideration to expand Cation *et al.*'s findings.

Because the generalizability of the current findings is limited to White, cis-gender male, and partnered Veterans, future studies should explore the impact of SCD and PTSD on suicidality in other populations of older Veterans, including racial and ethnic minorities, lesbian, gay, bisexual, transgender, and queer (LGBTQ+), and non-partnered/single Veterans. For instance, older transgender Veterans (age 65 and older) are at greater risk of dying by suicide than cis-gender Veterans (Boyer *et al.*, 2021), and sexual minority (gay, lesbian, bisexual) Veterans are more likely to have PTSD (Cochran *et al.*, 2013). Very little is known about SCD in older adult LGBTQ+ Veterans, though in a civilian population of older adults, it was found that up to 25 percent of the sample reported SCD (Flatt *et al.*, 2018).

A notable contribution of this work is that it continues to highlight and destigmatize the comorbidity of suicidal ideation in the context of PTSD. In their sample, 154 Veterans met criteria for PTSD and 52 Veterans endorsed both PTSD and suicidal ideation. While it would be beneficial to replicate these findings in a larger nationally representative sample of Veterans, this contributes to clinical findings that increase the need to consider, screen for, and integrate suicide risk management in routine therapeutic care for PTSD in older adult Veterans, especially when SCD is present. Overall, this work underscores how specific domains of self-reported cognitive difficulties might be particularly associated with suicidal intent, a more acute risk factor than suicidal ideation. Further delineation of the interconnections among these three psychological sequelae of SCD, PTSD, and suicide risk in Veterans could guide efforts toward personalized medicine approaches for late life suicide prevention research and treatment implementation.

## References

- Blow, F. C. et al.** (2012). Suicide mortality among patients treated by the Veterans Health Administration from 2000 to 2007. *American Journal of Public Health*, 102(S1), S98-S104.
- Boyer, T. L. et al.** (2021). Suicide, homicide, and all-cause mortality among transgender and cisgender patients in the Veterans Health Administration. *LGBT Health*, 8(3), 173-180.
- Cations, M., Cook, J. M., Nichter, B., Esterlis, I., and Pietrzak, R. H.** (2023). Subjective cognitive difficulties and posttraumatic stress disorder interact to increase suicide risk among middle-aged and older US military veterans. *International Psychogeriatrics*, 1-9.
- Clouston, S. A. et al.** (2017). Traumatic exposures, posttraumatic stress disorder, and cognitive functioning in World Trade Center responders. *Alzheimer's & Dementia: Translational Research & Clinical Interventions*, 3(4), 593-602.
- Cochran, B. N., Balsam, K., Flentje, A., Malte, C. A., and Simpson, T.** (2013). Mental health characteristics of sexual minority veterans. *Journal of Homosexuality*, 60(2-3), 419-435.
- Cox, K. S. et al.** (2016). Reducing suicidal ideation through evidence-based treatment for posttraumatic stress disorder. *Journal of Psychiatric Research*, 80, 59-63.
- Flatt, J. D., Johnson, J. K., Karpiak, S. E., Seidel, L., Larson, B., and Brennan-Ing, M.** (2018). Correlates of subjective cognitive decline in lesbian, gay, bisexual, and transgender older adults. *Journal of Alzheimer's Disease*, 64(1), 91-102.
- Günak, M. M., Barnes, D. E., Yaffe, K., Li, Y., and Byers, A. L.** (2021). Risk of suicide attempt in patients with recent diagnosis of mild cognitive impairment or dementia. *JAMA Psychiatry*, 78(6), 659-666.
- Hendin, H., and Haas, A. P.** (1991). Suicide and guilt as manifestations of PTSD. *American Journal of Psychiatry*, 148(5), 586-591.

**Kennedy, C., Tarokh, L., and Stein, M. B.** (2001). Cognitive difficulties and posttraumatic stress disorder in female victims of intimate partner violence. *CNS spectrums*, 6(9), 787-792.

**Kuehn, B. M.** (2009). Soldier suicide rates continue to rise. *JAMA*, 301(11), 1111-1113.

**McKinney, J. M., Hirsch, J. K., and Britton, P. C.** (2017). PTSD symptoms and suicide risk in veterans: Serial indirect effects via depression and anger. *Journal of Affective Disorders*, 214, 100-107.

**U.S. Department of Veterans Affairs, Office of Mental Health and Suicide Prevention** (2022). *National Veteran Suicide Prevention Annual Report*. Available at: <https://www.mentalhealth.va.gov/docs/data-sheets/2022/2022-National-Veteran-Suicide-Prevention-Annual-Report-FINAL-508.pdf> (Accessed 8 March 2023).

**Pompili, M. et al.** (2013). Posttraumatic stress disorder and suicide risk among veterans: A literature review. *The Journal of Nervous and Mental Disease*, 201(9), 802-812.

**Ronconi, J. M., Shiner, B., and Watts, B. V.** (2014). Inclusion and exclusion criteria in randomized controlled trials of psychotherapy for PTSD. *Journal of Psychiatric Practice*, 20(1), 25-37.

**Sher, L., Braquehais, M. D., and Casas, M.** (2012). Posttraumatic stress disorder, depression, and suicide in veterans. *Cleveland Clinic Journal of Medicine*, 79(2), 92.

**Sullivan, J.L. et al.** (2022) A paucity of data on veterans 65 and older and risk of suicide: A systematic review. *American Journal of Geriatric Psychiatry*.

**Sheffler, J.L., Meynadasy, M.A., Taylor, D.T., Kiosses, D.N., and Hajcak, G.** (2022). Subjective, neuropsychological, and neural markers of memory in older adults. *International Psychogeriatrics*, 34, 1035–1043.

**Truong, Q. et al.** (2022) Applying generalizability theory to examine assessments of subjective cognitive complaints: whose reports should we rely on - participant versus informant?  
*International Psychogeriatrics*, 34, 1023–1033

**The White House.** (2022) *Fact Sheet: Biden-Harris Administration Actions to Prevent Suicide*. Available at: <https://www.whitehouse.gov/briefing-room/statements-releases/2022/09/30/fact-sheet-biden-harris-administration-actions-to-prevent-suicide/> (Accessed: 8 March 2023).