

COMMENTARY

Risks of suicidal behavior among individuals diagnosed with dementia

Commentary on “Determinants of suicidal behavior in dementia: A Swedish national register-based study” by Hedna *et al.*

Annette Erlangsen^{1,2,3} 

¹Danish Research Institute for Suicide Prevention, Mental Health Centre Copenhagen, Hellerup, Denmark

²Department of Mental Health, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA

³Centre for Mental Health Research, National Centre for Epidemiology and Population Health, The Australian National University, Canberra, Australia
E-mail: annette.erlangsen@regionh.dk

Recent trends in longevity promise longer life spans for each new generation in many countries of the world (Oeppen & Vaupel, 2002). However, reaching higher ages also implies an elevated risk of developing dementia (Corrada *et al.*, 2010). Also, suicide rates have consistently been found to be high among older adults, especially at very high ages (Shah *et al.*, 2016). It is, thus, of relevance to consider whether dementia may be linked to elevated risks of suicide. Given that suicide is a relatively rare event, the research findings, which have sought to answer this question, have been of a lower level of evidence, and data on large samples have only been available in few countries (Erlangsen *et al.*, 2008; Haw *et al.*, 2009).

The rate of suicide deaths is highest among older adults in many high-income countries when compared to younger age groups (Shah *et al.*, 2016). It has, however, been more complicated to identify the true rate of non-fatal events, i.e. suicide attempts, as these might escape detection among older adults. For instance, it might be challenging to determine whether an overdose of a prescribed medication originated from an intentional or accidental act (Qin & Mehlum, 2020). As with suicide deaths, older adults who have a suicide attempt seem to be more determined when compared to younger adults. This is also supported by the finding that risk factors associated with serious suicide attempts have been shown to resemble those, which are linked to suicide deaths (Beautrais, 2001). In other words, older adults who have a suicide attempt might be comparable to those who die by suicide in terms of what sets them at elevated risks of suicidal behaviors and it can be meaningful to examine the two outcomes jointly, especially when studying rare events.

Obtaining representative data for individuals diagnosed with dementia is difficult. In countries where linkage or administrative data are available, hospital registers may provide a helpful resource for identifying individuals diagnosed with dementia, albeit only being available for those individuals who were given diagnosis in a hospital setting (Erlangsen *et al.*, 2018). A substantial proportion of individuals with dementia are likely to only be diagnosed in the primary care sector. Clinical databases, such as the one used by Hedna *et al.* (2024), provide therefore a unique resource in terms of having data on virtually all individuals who had been diagnosed with dementia either in a primary care office or a memory clinic and were residing in Sweden. Further, the database was based on validated diagnoses and included other relevant and detailed information.

By analyzing data on a large and community-based population of individuals with dementia, valuable insights were secured regarding the possible association between dementia and suicide for individuals aged 75 years and over (Hedna *et al.*, 2024). Having data on newly recorded cases in the Swedish Dementia Registry over a 10-year period, the authors had access to detailed information regarding type of dementia and cognitive status at the time of diagnosis, as measured by the Mini-Mental State Examination (MMSE). Using a unique personal identifier, data from the dementia database were linked with national Swedish register data (Erlangsen *et al.*, 2018). This provided individual-level information regarding in-home care, prescribed medication for mental disorders, and in- and outpatient hospital care for mental disorders, such as depression. Among these data, were several covariates, such as MMSE scores and in-home care, which not previously have been

examined for national samples and in relation to dementia. Likewise, information on suicide attempts and suicides was available via national register data and examined jointly as suicidal behavior.

Dementia was found to be associated with suicidal behavior (Hedna *et al.*, 2024). While suicidal behavior may be considered an extreme act of despair, it is likely that many more individuals with dementia are exposed to similar stressors and that their mental well-being is affected.

In adjusted analyses, individuals with dementia who had a history of a mental disorder or previous suicide attempt were found to have elevated rates of suicidal behavior when compared to those with no such history. Individuals with physical frailties, measured through hospital diagnoses or by being a recipient of home care, were also found to have excess risk of suicidal behavior. These findings are in line with general findings for older adults, which have shown that vulnerable groups have elevated risks of suicidal behavior (Conwell *et al.*, 2010; Fassberg *et al.*, 2016). Concerningly, individuals with dementia who were born outside the country were also found to have elevated risks of suicide when compared to those born in the country. It could, however, not be established whether these individuals were foreign nationals and, if so, what was their country of origin. Depending on this, information on dementia and psychoeducation regarding mental well-being for individuals of non-Swedish origin might be indicated.

Interestingly, individuals with milder stages of dementia seemingly have higher risks of suicidal behavior when compared to those in more advanced stages. Adjusted analyses of Danish linkage data during 1980–2016 and presented as supplementary material showed that rates of suicide were 3-fold (aIRR, 3.0, CI 95%, 1.9–4.6) higher among those who had been first-time diagnosed with dementia within the last month when compared to individuals who had not been diagnosed with dementia (Erlangsen *et al.*, 2020). Using the same comparison group, significantly lower rates were found for individuals who had been first-time diagnosed 1–2 years (aIRR, 0.7, CI 95%, 0.5–0.9) and 3–5 years (aIRR, 0.5, CI 95%, 0.4–0.7) ago. Although using different measures, these findings might be comparable and relate to the same phenomena. There are different possible explanations for these observations. Firstly, changes in cognition, which occur due to the progression of the disorder, may reduce physical abilities for carrying out a suicidal act. Thus, a lower the risk of suicide among individuals in an advanced state of dementia is likely to be the case, i.e. some years after first diagnosis (Erlangsen *et al.*, 2020). Secondly, receiving the news that one has a

severe, chronic disorder can be very distressing, and elevated risks of suicide have been demonstrated during the first months after being diagnosed with a range of physical disorders (Erlangsen *et al.*, 2020; Petersen *et al.*, 2020). Both findings point to the time of the diagnosis being a crucial point for intervention.

Although most people have some knowledge about dementia and the course of the disorder, they may lack insights regarding treatment and support options, which can help improve quality of life also in advanced stages of the disorder. Specific personality traits have been suggested as prevalent among those older adults who died by suicide, for instance, a wish for “being in control” of one’s life (Kjølseth *et al.*, 2010). Consequently, fear of losing this autonomy when becoming dependent on help from others may lead to suicidal thoughts. The anticipation of these problems, and a wish to act while one is still apt to do so, might explain the higher risk of suicidal behavior during early stages of the disorder. Also, it underscores some opportunities for intervention. Previous efforts of psychoeducation in combination with assignment of a case manager provided in primary care settings have shown promising results in terms of reducing levels of suicidal thoughts among older adults with mood disorders (Gallo *et al.*, 2013; Unutzer *et al.*, 2006). Community-based efforts to support individuals with dementia and their informal caregivers exist in several countries and might be intensified around the time of diagnosis.

In the study by Hedna *et al.* (2024), being of older age or recipient of home care was also linked to an excess risk of suicidal behavior. These markers may, in principle, be related to the above-mentioned features of a more advanced stage of dementia, while higher risks were found for those of younger age and those who did not require home care. Previous findings have suggested that individuals who experience an onset of dementia at an unexpected age, i.e. 50–69 years versus 70 years and over, were associated with higher rates of suicide (Erlangsen *et al.*, 2008).

A limitation of studies based on secondary data is that information on relevant factors, which might provide an understanding of causal links, may not be available. Based on the existing evidence, it seems that efforts to prevent adverse mental health and suicidal thoughts should best be offered to individuals in milder stages of dementia, ideally at the time of first diagnosis.

Conflict of interest

None.

Description of author(s)' roles

The authors, Lauren L. Brown and Catherine García, equally contributed to the manuscript, revised, read, and approved the submitted version.

References

- Beautrais, A.** (2001). Suicide and serious suicide attempts: two populations or one? *Psychological Medicine*, 31(5), 837–845.
- Conwell, Y., Duberstein, P. R., Hirsch, J. K., Conner, K. R., Eberly, S., & Caine, E. D.** (2010). Health status and suicide in the second half of life. *International Journal of Geriatric Psychiatry*, 25(4), 371–379.
- Corrada, M. M., Brookmeyer, R., Paganini-Hill, A., Berlau, D., & Kawas, C. H.** (2010). Dementia incidence continues to increase with age in the oldest old: the 90+ study. *Annals of Neurology*, 67(1), 114–121.
- Erlangsen, A., Qin, P., & Mittendorfer-Rutz, E.** (2018). Studies of suicidal behavior using national registers. *Crisis—the Journal of Crisis Intervention and Suicide Prevention*, 39(3), 153–158.
- Erlangsen, A., Stenager, E., Conwell, Y., Andersen, P. K., Hawton, K., Benros, M. E., Nordentoft, M., & Stenager, E.** (2020). Association between neurological disorders and death by suicide in Denmark. *JAMA*, 323(5), 444–454.
- Erlangsen, A., Zarit, S. H., & Conwell, Y.** (2008). Hospital-diagnosed dementia and suicide: a longitudinal study using prospective, nationwide register data. *The American Journal of Geriatric Psychiatry*, 16(3), 220–228.
- Fässberg, M. M., Cheung, G., Canetto, S. S., Erlangsen, A., Lapierre, S., Lindner, R., Draper, B., Gallo, J. J., Wong, C., Wu, J., Duberstein, P., & Wærn, M.** (2016). A systematic review of physical illness, functional disability, and suicidal behaviour among older adults. *Aging and Mental Health*, 20(2), 166–194.
- Gallo, J. J., Morales, K. H., Bogner, H. R., Raue, P. J., Zee, J., Bruce, M. L., & Reynolds, C. F.** (2013). Long term effect of depression care management on mortality in older adults: follow-up of cluster randomized clinical trial in primary care. *BMJ*, 346(jun05 2), f2570–f2570.
- Haw, C., Harwood, D., & Hawton, K.** (2009). Dementia and suicidal behavior: a review of the literature. *International Psychogeriatrics*, 21(03), 440–453.
- Hedna, K., Sigström, R., Johnell, K., & Waern, M.** (2024). *Determinants of suicidal behavior in dementia: A Swedish national register-based study*. *International Psychogeriatrics*.
- Kjølseth, I., Ekeberg, O., & Steihaug, S.** (2010). Elderly people who committed suicide—their contact with the health service. What did they expect, and what did they get? *Aging & Mental Health*, 14(8), 938–946.
- Oeppen, J., & Vaupel, J. W.** (2002). Broken limits to life expectancy. *Science*, 296(5570), 1029–1031.
- Petersen, B. D., Stenager, E., Mogensen, C. B., & Erlangsen, A.** (2020). The association between heart diseases and suicide: a nationwide cohort study. *Journal of Internal Medicine*, 287(5), 558–568.
- Qin, P., & Mehlum, L.** (2020). Deliberate self-harm: case identification and incidence estimate upon data from national patient registry. *PloS One*, 15(4), e0231885.
- Shah, A., Bhat, R., Zarate-Escudero, S., DeLeo, D., & Erlangsen, A.** (2016). Suicide rates in five-year age-bands after the age of 60 years: the international landscape. *Aging & Mental Health*, 20(2), 131–138.
- Unützer, J. C., Tang, L., Oishi, S., Katon, W., Williams J. W. Jr, Hunkeler, E., Hendrie, H., Lin, E. H. B., Levine, S., Grypma, L., Steffens, D. C., Fields, J., Langston, C., & for the IMPACT Investigators** (2006). Reducing suicidal ideation in depressed older primary care patients. *Journal of the American Geriatrics Society*, 54(10), 1550–1556.