

EDITORIAL

Novel international research on late-life suicide

Editorial for the special issue suicide in older adults

Older adults are vulnerable to suicidal ideation and behavior. Suicide rates in older adults are high; according to the Centers for Disease Control and Prevention, adults 75 years old and older have one of the highest suicide rates (20.3 per 100,000) and older men (75 years or older) have the highest suicide rate (42.2 per 100,000) among any age and sex groups. The International Psychogeriatrics Special Issue on Late-Life Suicide focuses on critical and novel findings from research conducted worldwide. It includes 6 data and systematic review papers, 6 commentaries (one for each paper), an overall commentary by Dr Conwell on the value of a longer life cut short by suicide, and this editorial.

The articles in the Special Issue evaluate a range of diverse topics such as a systematic review of psychosocial protective factors; childhood trauma and its association with early vs. late-onset suicidal behavior; the relationship of community gender norms, mental health and suicidal ideation; hospital-presenting self-harm among older adults; community mental health use following intentional self-harm; and predictors of suicidal behavior in dementia. Reflecting the international focus of the journal and the progress in suicide research that has been made worldwide, we include individual or collaborative research from Australia, Canada, Denmark, Ireland, Japan, Republic of Korea, Sweden, UK, and different states from USA. Even though the studies' findings may help us better understand suicidal ideation and behavior in older adults, we still need to interpret the results with caution and view them through the lens of each specific society and culture.

The Special Issue extends the understanding of suicidal ideation and behavior in older adults as reported in two papers published in a recent theme-based issue, "Depression and Suicide Ideation in Older Adults (35:12)" of the IPG. In the first paper, Cations *et al.* (2023) examined the use of mental health services and psychopharmacotherapy in older adults who died while accessing or waiting for permanent residential aged care or home care packages in Australia between 2008 and 2017. Male sex, diagnosis with a mental health condition, not having dementia, less frailty, and a hospitalization for self-injury in the year before death were associated

with death by suicide compared to death by another cause. In the second article, Zwar *et al.* (2023) conducted a longitudinal study in 10 European countries (i.e., Austria, Germany, Sweden, Netherlands, Spain, Italy, France, Denmark, Switzerland, and Belgium) with different welfare systems examining the relationship of transition to caregiving within or outside the household with changes in suicidal ideation. Overall, those adults who transitioned into caregiving inside the household had greater odds of suicidal ideation, especially if they transitioned into care for parents or partners, and within Southern and Bismarkian welfare systems.

The following sections highlight the most important aspects of each paper and commentary of the Special Issue and proposes areas of future research. At the end of this editorial, we propose an individual approach to suicide prevention as one of the paths for research in late-life suicide.

Systematic review of psychosocial protective factors (Ki *et al.*, 2024)

Ki *et al.* (2024) conducted a systematic review to evaluate the association between protective factors and reduced suicidality among older adults. The systematic review followed the PRISMA guideline on relationship of 15 protective factors and suicidal ideation: perceived control, well-being and quality of life, life satisfaction, purpose in life, resilience, coping, religiosity, hope, self-regulation, sense of belonging, mattering, positive relationship, social support, social connectedness, and social participation. All protective factors had significant associations with reduced suicidal ideation and behavior, and particularly purpose in life, resilience, and positive relationships. Dr Van Orden's commentary identified four critical characteristics of late-life suicide to consider in the context of protective factors which may be the target of interventions to improve suicide prevention: undetected risk of suicide in primary care, lethal first suicide attempt, psychosocial strengths associated with aging, and social connection.

Childhood trauma associated with early-onset suicidal behavior (Chang *et al.*, 2023)

In a cross-sectional study, Chang *et al.* (2023) examined the relationship between childhood traumatic experiences (childhood abuse or childhood neglect) and early- vs. late-onset suicidal behavior among older adults who have been recruited from inpatient and outpatient psychiatric services as well as from the broad community in Pittsburgh, PA, USA. The sample consisted of 224 adults, 50 years or older, recruited in four groups: 84 suicide attempters, 44 suicide ideators, 58 depressed non-suicidal patients and 38 psychiatrically healthy controls. Childhood abuse or neglect was determined by The Childhood Trauma Questionnaire – Short Form (Bernstein *et al.*, 2003), a self-report instrument which evaluates emotional, physical, and sexual abuse as well as emotional and physical neglect. Early-onset vs. late-onset attempters were differentiated based on whether their first attempt took place before or later than age 30.

Results showed that early-onset attempters had significantly higher scores on emotional and physical abuse and neglect than late-onset attempters. There were no significant differences between these two groups on sexual abuse. These results indicated that childhood trauma had a stronger relationship with a first suicide attempt at 30 years old or younger compared to a first suicide attempt at an age older than 30 years old. In his commentary, Dr. Kennedy discussed the impact of these findings on late-life suicide prevention and explored how this critical area of research can be expanded from addressing suicidal ideation and behavior to actually preventing suicide deaths.

Community gender norms, mental health, suicide ideation, and attempts (Kanamori *et al.*, 2023)

Kanamori *et al.* investigated the connection between older adults' perceptions of community gender norms and mental health (including suicide-related) outcomes. Cross-sectional data were analyzed from the 2019 wave of the Japan Gerontological Evaluation Study, a large-scale population-based cohort study. The authors examined the perceptions of community gender norms and mental health outcomes, including suicidal ideation and attempt, in a sample of almost 26,000 participants aged 65 and over from 61 municipalities in Japan. A self-report questionnaire was mailed to residents 65 years old or older who were not certified as needing public long-term care. The questionnaire had a section that

required all participants to answer, and eight additional modules randomly assigned to participants; the authors examined data from one of these modules with items of gender norms. History of suicidal ideation and attempt was assessed using the SUPRE-MISS community survey undertaken by the World Health Organization (Bertolote *et al.*, 2005).

Main results indicated that men and women who perceived gender norms as restrictive had about 2–2.5 times higher prevalence of history of suicidal ideation and suicide attempt than those without these perceptions. The findings stress the importance of the association between perceptions of a restrictive social environment with suicidal ideation and behavior. Lutz *et al.*'s commentary discussed the need to examine the association and potential causality of these two concepts, which can be addressed in a longitudinal adequately powered study.

Hospital-presenting self-harm in older adults (Troya *et al.*, 2023)

Troya *et al.* (2023) examined trends in rates of self-harm among emergency department presenting older adults in Ireland over a 13-year period between 2007 and 2019. This population-based study used data from the National Self-Harm Registry Ireland, and defined self-harm as a broad range of behaviors from non-suicidal self-injury to suicide attempt. Results showed that: the average person-based rate of hospital-presenting self-harm in older adults was 57.8 per 100,000; women rates were 1.1 times higher than the men counterparts (61.4 vs. 53.9 per 100,000); higher rates of self-harm were found among 60 to 69 years old and lower rates in the oldest age group of 80 years or older in both women and men; however, 80 years old and older males had 1.4 times higher rates compared to their female counterparts (26.9 vs 18.7 per 100,000). Intentional drug overdose, alcohol, and self-cutting were the methods with the highest percentage in any age group and in both women and men but not in the same order. For example, intentional drug overdose was the method with the highest percentage of any age and gender subgroup, but alcohol-related self-harm significantly decreased from 60–69 to 80+ years old (from 33.7% to 12.7%). Furthermore, higher percentages of men attempted hanging and drowning than women (hanging: 7% vs. 2.1%; drowning: 5.1% vs. 3.15). Finally, the percentage of self-poisoning in both women and men increased from 60 to 80+ years old, with significantly higher percentage in those older adults 80+ years old (60–69 yo = 3.2%; 70–79 yo = 3.8%;

80+ years old = 5.7%). Patel *et al.*'s commentary emphasized the importance of programs in identifying trends, risks, and the influences of self-harm in the population level, evaluated the above findings and provided insights into self-harm in older adults.

Community mental health service use following hospital-treated intentional self-harm (Sharwood *et al.*, 2023)

While Troya *et al.* (2023) focused on hospital-presenting incidence of self-harm in older adults, Sharwood *et al.* (2023) examined the impact and patterns of community mental health (CMH) care following index hospital-treated intentional self-harm on all-cause mortality. This longitudinal whole-of-population record linkage study was conducted between 2014 and 2019, in New Wales, the Australia's most populous state, which CMH services are provided statewide to assess and treat non-admitted patients.

Findings demonstrated that CMH care within 14 days from index, which was received by 56% aged 45 years or older who experienced a hospital-treated intentional self-harm, was associated with 34% lower risk of death while older men and chronic injury were associated with greater risk of death overall. Attendance at CMH within 14 days of discharge was "more likely to occur in females, persons under the age of 65, those who were divorced or separated, persons with pre-index CMH attendance, and in those who were hospitalized." Fiske *et al.*'s commentary underlined the strengths of this large, whole-of-population study but also discussed areas for future research, such as addressing confounding variables, through experimental or quasi-experimental designs instead of an observational design, or examining social disconnection as an important variable when evaluating the relation between CMH services and all-cause mortality in this population.

Determinants of suicidal behavior in dementia (Hedna *et al.*, 2023)

Hedna *et al.* (2023) examined predictors of suicidal behavior in older adults 75 years or older. This longitudinal national register-based study included 59,042 Swedish residents with dementia identified in the Swedish Dementia Registry (SveDem) in 2017 and followed until 12/31/2018. The authors evaluated non-fatal self-harm and suicide. One tenth

of the participants lived in a long-term care facility, one third received home care, and 52% had MMSE > 20. Most common dementia was dementia of the Alzheimer's type (49%) followed by vascular dementia (20%). About 6% of participants had serious depression, and 0.6% had a registered episode of non-fatal self-harm within the 5 years prior to dementia diagnosis.

Twenty-nine participants died by suicide corresponding to an incidence of 12 per 100,000 person-years (18 per 100,000 for men and 12 per 100,000 for women). One-third of suicides occurred in the first year of diagnosis, and 80% of older adults who died by suicide used a violent suicide method. Significant variables associated with suicide compared to no suicidal behavior were 75–84 years old, born outside of Sweden, living in home care, MMSE > 20, depression, previous self-harm, and use of hypnotics. Significant variables associated with non-fatal self-harm were: 75–84 years old, born outside in Sweden, living in home care, depression, previous self-harm, high hospital frailty risk score, and use of antidepressants and hypnotics.

Dr Erlangsen's commentary underscored the difficulty in obtaining representative data for demented participants, and the unique examination of individual level information and its relationship with suicidal behavior that the article provided. Individuals with milder stages of dementia had higher risk of suicidal behavior than those with more severe dementia and that the period of high risk was 1–2 years after the dementia diagnosis. Recent findings indicate that suicide factors such as memory and broader cognitive impairments in older adults increase with age and highlight the importance of dementia prodrome as a candidate for late-onset suicide risk (Szanto *et al.*, 2023). The relationship of cognitive impairment with suicide ideation and behavior is even more complicated because suicide intent may be difficult to ascertain in older adults with moderate to severe cognitive impairment or dementia (Draper *et al.*, 2003). All these findings point out to the need for future research on the association of cognitive impairment and suicidal ideation and behavior.

In his commentary, Dr Conwell reviewed significant areas related to late-life suicide and discussed problematic aspects of the definition of the Years of Potential Life Lost (YPLL) and the way it is calculated. YPLL is "calculated as the sum of the differences for each suicide decedent between their actual age at death and the average life expectancy of people at that age." As a result, the YPLL for suicide is greater for younger adults than middle-aged or older adults. To address this discrepancy, Dr Conwell recommended the refinement of the

concept with development of a metric of Years of Experience in Life Lost.

Individualized approach to suicide prevention

Suicide is a rare event with devastating outcomes for the individual, family, and society. Despite the development of different theories of suicide, we haven't found an inclusive theory of suicide which will explain all suicide deaths. Although we have identified a high number of risk factors, the predictive accuracy of these factors is questionable. In a meta-analysis of 50 years of mixed-age studies that have attempted to longitudinally predict a specific suicide-related outcome, prediction based on risk factors was only slightly better than chance for all outcomes (Franklin *et al.*, 2017). Therefore, general risk factors do not contribute to strong predictions of suicidal thoughts and behaviors leading us to reevaluate the effects of risk factors and explore the possibility that each risk factor may have a differential impact on a person's path to suicide depending on the uniqueness and history of each individual.

Data from our Emotion, Cognition, and Psychotherapy lab of proximal events to suicidal behavior in older patients who have been hospitalized for suicidal behavior revealed that the specific events, triggers, and negative emotions associated with the suicide attempt varied from person to person. Therefore, we propose that suicidal behavior may result from individual-specific factors and we emphasize the importance of examining the individualized path to suicide for every person at a specific time point.

A promising approach to identify the person's unique path to suicide at a particular time point is to examine the factors (e.g., events, triggers, associated emotions, associated thoughts) that contributed to the suicide attempt in those older adults who have been recently hospitalized. The proximity of the hospitalization to the suicide attempt may provide a unique opportunity to help us understand what led the older adult to attempt to die by suicide. As soon as we understand the person's unique path to suicide, we may develop techniques to prevent future suicidal behavior. This approach has its limitations because many older adults use lethal means in their first suicide attempt, but it may help us ascertain the most proximal factors to a suicide attempt. Research focusing on systematically evaluating each person's unique path to suicide may help us develop personalized interventions to prevent suicidal behavior.

The Special Issue on Late-Life Suicide presents a wide range of research topics conducted in different parts of the world. The diversity of topics,

populations, and research areas highlights the progress that we have made in understanding suicide and suicide-related predictors and outcomes in older adults over the past few decades. However, it also underscores the challenges that lie ahead. Despite the pivotal effort of researchers, the significant government funding across the world (including the US National Institute of Mental Health which has identified suicide prevention as a high priority), the community resources, and the support from suicide-related foundations, late-life suicide continues to be understudied. Additional research is solely needed to help investigate suicidal ideation and behavior in older adults, a group that has consistently had alarmingly high suicide rates.

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