Discussant: A. Gross, *Johns Hopkins Bloomberg School of Public Health, Baltimore, Maryland*

Suicide incidence increases with age and adults aged 65 and older have the highest risk of completed suicide. Depression is an established risk factor for completed suicide. However, valid and reliable assessment of depression and related emotional states among older adults is challenging. Prior research has identified systematic measurement differences in the presentation of depression in later life (e.g., relative emphasis on vegetative vs. cognitive symptoms). The result is an underestimation of cases when relying on established diagnostic criteria (e.g., DSM-5). However, how large population-based cohorts, such as the Health and Retirement Survey, should address this bias in their data collection is unclear. Failure to address this type of measurement error may result in an underestimation in the burden of depression and related behaviors (e.g., suicidal ideation) among older adults. Moreover, large-scale data collection of events related to depression, such as suicide death surveillance systems, may also be impacted by measurement biases that correlate with age. This symposium describes three types of methodological challenges, and potential solutions, in measuring depression and suicidal behavior in later life: (1) improving case identification in the absence of a "gold standard" using latent trajectory models; (2) estimating the prevalence of suicidal ideation in population surveys through using novel approaches to address non-random missing data; and (3) improving investigations of circumstances related to late-life suicide using "big data" machine-learning methodologies. The discussant will address how these methodologies can be applied to a wide range of measurement issues pertaining to mental health in later life.

SURVEILLANCE OF SUICIDE IN LATER LIFE: APPLYING MACHINE LEARNING TOOLS TO ENHANCE DATA QUALITY

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Suicide risk is highest among older adults. Since 70% of aging adults will require some form of long-term care (LTC), residential LTC potentially constitutes an important setting for preventing suicide. We applied data science methodologies to analyze textual narratives from suicide decedents in the National Violent Death Reporting System (NVDRS) (N= 50,438 deaths aged 50+, 2003–2015). Narratives were analyzed using supervised machine learning (ML) algorithms. Algorithms were trained with confirmed cases related (true positive) and not related (true negative) to LTC verified from the textual narratives via keywords related to transitioning/residing in LTC (e.g., "nursing," "assisted," "care", "moving," etc.). ML results were compared to NVDRS-identified data on location and circumstances at the time of death. We find evidence of misclassification of suicide location, which results in an underestimate of the frequency of suicide related to LTC. Results have implications for improving surveillance of suicide risk in later life.

SKIP PATTERNS AND MISSED OPPORTUNITIES: SELECTION MODELS OF PASSIVE SUICIDAL IDEATION IN THE HRS

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Incidence of suicide is highest among middle-aged and older adults. Identifying people with suicidal thoughts is crucial for suicide prevention. However, available data on ideation are often limited to the context of depression. The study aims to estimate the population prevalence of past-year passive suicidal ideation by addressing missing data introduced by the skip pattern of the Composite International Diagnostic Interview Major Depression Module in the 2012 Health and Retirement Study (n=17,688). Approximately 10% (n=1,583) screened into the Module, of whom 66.3% reported ideation. Using Heckman selection models to correct for bias in the prevalence of ideation introduced by the skip pattern, we estimate that 13.2% of those who did not screen into the Module had ideation, for a total population prevalence of 19.1%. Implications and relative strengths and limitations of selection models to assess sensitive topics like suicidal ideation are discussed.

COMPARISON OF METRICS FOR THE IDENTIFICATION OF LONG-TERM DEPRESSION IN ABSENCE OF GOLD STANDARD

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Questionnaires of depressive symptoms assess symptom severity at one timepoint. However, we can evaluate the ability of metrics to identify individuals at risk of more clinically relevant long-term depression. Using a depressive phenotype