

Loneliness and social isolation as antecedents of cognitive decline have received substantial attention in recent research. This symposium addresses this year's conference theme of aging in the "new normal". The COVID-19 pandemic has highlighted the negative impacts of loneliness and social isolation on older adults' health and wellbeing. This symposium includes studies that shed light on the relationships between loneliness, social isolation and cognitive health using a multidisciplinary approach, and provide recommendations and future directions for advancing this research area. The first presentation examines cardiovascular biomarkers as potential mechanisms that mediate the longitudinal relationship between loneliness and cognitive decline with the HRS dataset. The second presentation examines several social isolation indicators and their effects on cognitive decline in a Canadian longitudinal study. Using the US ADRC longitudinal study of aging, the third study shows the effect of loneliness on cognitive health in older adults pre- and post-onset of the COVID-19 pandemic. The symposium concludes with a literature review of the different measures employed to operationalize the constructs of loneliness, isolation, which resulted in heterogeneous study findings on their influences on the risk of developing dementia. This review calls for consistent measures to produce comparable evidence on the health consequences of loneliness and isolation. In all, this symposium reports and reviews the latest evidence on the association between social isolation, loneliness and cognitive health amidst the ongoing COVID-19 pandemic. It also echoes the conference theme of transforming disruption to opportunities in aging health service and research.

#### BIOLOGICAL PATHWAYS UNDERLYING THE LONGITUDINAL ASSOCIATION BETWEEN LONELINESS AND COGNITIVE DECLINE

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Loneliness has been recognized as a risk factor for cognitive decline (CD) in older adults. However, how loneliness "gets under the skin" to influence CD has been conceptually proposed but rarely empirically examined. The purpose of this study is to investigate whether cardiovascular and kidney biomarkers mediate the longitudinal association between loneliness and CD. We used the cross-lagged panel model (CLPM) to examine the hypothesized relationships with 2006, 2010 and 2014 waves of data from the Health and Retirement Study (HRS). Loneliness is measured with 3-item UCLA loneliness scale. Cognitive health was assessed using the total cognition score. Biomarkers considered including HbA1C, total cholesterol, HDL cholesterol, CRP, and Cystatin C. Among all five biomarkers examined, HbA1c significantly mediated the longitudinal association between loneliness and CD. The other biomarkers examined did not mediate the relationship between loneliness and CD. The study findings show loneliness might affect CD through elevating HbA1C levels.

#### A PUBLIC HEALTH ANALYSIS OF THE RELATIONSHIP BETWEEN LONELINESS, ISOLATION, AND DEMENTIA

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Loneliness and isolation are now characterised as major public health problems largely because of reported associations with negative health outcomes including dementia. We adopt a public health perspective and review the relationship between loneliness/isolation and dementia focussing on how these concepts are defined, measured, and reported. We identified community based longitudinal studies which measured loneliness/isolation at baseline and dementia at follow up (minimum 12 months) published up to February 2021. We identified 12 papers for loneliness and 15 for isolation which demonstrated substantial heterogeneity in how exposure (loneliness/ isolation) and outcome (dementia) were measured and reported. For example, dementia was measured in 5 different ways: death, hospitalisation, clinical diagnosis, dementia screening tools or cognitive function. Evidence to support a relationship between loneliness/isolation and dementia is inconclusive largely because of this methodological heterogeneity. Using consistent exposure and outcome measures is a prerequisite for determining the health consequences of loneliness and isolation.

#### THE RELATIONSHIP BETWEEN LONELINESS AND THE COVID-19 PANDEMIC ON COGNITION AND WELL-BEING IN OLDER ADULTS

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Social distancing is necessary to limit the spread of Covid-19. However, many older adults are predisposed to isolation and loneliness despite calls to socially distance. The current study examined loneliness during Covid-19 in relation to cognition and wellbeing in older adults. Data were extracted from a U.S. ADRC longitudinal study of aging database. Cognition was assessed using the NACC UDS 3.0 battery. Measures of well-being include: Short Form Health Survey, Subjective Memory Assessment, and Geriatric Depression Scale. Measurement of loneliness was selected from the NIH ADRC Covid-19 questionnaire. Data were from 115 older adults with normal cognition or MCI with a visit ≤18 months before research stoppage in March 2020 and after resumption in late-June 2020. Cognition and wellbeing are compared before and after onset of pandemic. Isolation due to Covid-19 may have long-term implications. Results of this study will highlight the need for acute assessments and psychosocial interventions.

#### THE LONGITUDINAL ASSOCIATION BETWEEN SOCIAL ISOLATION AND COGNITIVE DECLINE AMONG CANADIAN OLDER ADULTS

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Social isolation is an emerging public health concern with an emphasis on its potential preventive impact on cognitive impairment. We hypothesize that change in social isolation is associated with cognitive decline over two years. Latent