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Special Issue Article

Social Disconnection in Late Life Mental Illness – Commentary From the National Institute of Mental Health

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Social disconnection – a term which refers to either *objective* social isolation, *perceived* social isolation (otherwise known as loneliness), or the co-presence of both – is a prevalent affliction among older adults. Nearly a quarter of older Americans live alone,^{1,2} and surveys suggest that over one third of Americans over the age of 45 are lonely at least some of the time,³ with levels of loneliness increasing rapidly among those over the age of 70,⁴ the same age when objective social isolation is highest.⁵ In the midst of the COVID-19 Global Pandemic, which poses disparate mortality risk for older adults,⁶ and public health regulations encouraging physical isolation to protect the most vulnerable populations, the prevalence of abject objective social isolation, as well as feelings of loneliness, are likely to rise. These issues highlight the need for effective strategies and solutions to help alleviate the negative health impacts of social isolation.

Social disconnection puts individuals at greater risk for all-cause morbidity and mortality⁷ at a rate greater than or equivalent to traditional health risk factors such as alcohol consumption, physical activity, and obesity.⁸ It also has profound effects on mental health. A commonly reported association exists

between loneliness and depression, with some evidence that feelings of loneliness exacerbate later depressive symptoms,^{9–11} though the relationships may be bidirectional.^{12–14} Links also exist between social disconnection and a number of other mental illnesses, including anxiety,^{13,15,16} psychosis,^{17,18} obsessive compulsive disorder,¹⁹ borderline personality disorder,^{20,21} and post-traumatic stress disorder.^{22,23} Alarming, social disconnection – either real or perceived – is also one of the primary risk factors for a suicidal attempt²⁴ and is one of the primary motivators of self-harm in older adults.²⁵ Yet mechanistic understanding of how mental illness contributes to, is exacerbated by, or is otherwise linked to social disconnection remains elusive, and therapeutic interventions which leverage social connection to enhance compliance with or efficacy of mental health treatment,^{26,27} though promising, remain scarce.

As the United States population rapidly ages – within the next 15 years, the number of US adults over the age of 65 are expected to outnumber US children under the age of 18 for the first time in history²⁸ – issues of social disconnection are becoming more pressing public health issues.²⁹ Older adults are disproportionately likely to encounter bereavement, to

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exit the workforce (i.e., through retirement or layoffs), to endure decreased physical functioning and mobility which can limit in-person social interactions, and to suffer visual and hearing impairments, making telephone, social media, and other digital means of social interaction difficult or impossible. Together, these factors making them more likely to become objectively socially isolated. This can be accompanied by profound loneliness—the discrepancy between the number or quality of relationships that one *desires* and those that one *has*.³⁰ Yet even in the presence of objective social connection (for instance, when living among family or in an assisted living community), individuals can experience the feeling of loneliness. Indeed, the statistical correlation between loneliness and objective social isolation is relatively weak.^{31–33}

Though perceived social isolation (i.e., loneliness) is generally more predictive of individuals' overall assessment of their mental health than objective social isolation,^{31,33} measuring both types of social disconnection concurrently and independently is critical.³⁴ Objective and perceived social isolation are independently associated with a number of adverse health outcomes, including poor health behaviors,³⁵ reduced cognitive functioning,³⁶ Alzheimer's disease,³⁷ and even mortality.⁷ Yet they may also interact to exhibit a synergistic interactive effect, with loneliness being particularly deleterious in the presence of objective isolation and vice versa.^{38–40} In the context of understanding mental illness trajectories, it is particularly important to measure objective and perceived social isolation independently, as many mental health issues are accompanied by symptoms that may differentially increase the odds of objective or perceived social isolation or that may be differentially impacted by objective or perceived social isolation. Further, the manners in which these different types of social disconnection impact mental illness and the underlying neural circuits relevant for domains of psychopathology may be independent, even if the occurrence of objective and perceived social isolation is not always orthogonal. Future research should address whether and how these distinct forms of social disconnection can thus be targeted through intervention research or leveraged to enhance other mental health interventions. Yet such intervention research must be informed by neurobiological and behavioral mechanistic understanding of how social isolation,

loneliness, or their co-occurrence differentially impact mental illness.²⁹

The National Institute of Mental Health (NIMH) is committed to transforming the understanding and treatment of mental illnesses through basic and clinical research, paving the way for prevention, recovery, and cure. To carry out that mission, NIMH supports research across the entire translational pipeline, ranging from basic neuroscience, genetics, behavioral science, technology development, or drug discovery to effectiveness research evaluating pharmacological, psychosocial, somatic, rehabilitative and combination interventions for mental and behavioral disorders and mental health services research. The Division of Translational Research (DTR) supports research efforts to translate knowledge from basic science to discover the etiology, pathophysiology, and trajectory of mental disorders across the lifespan and is committed to fostering work that will lead to new discoveries and effective interventions. DTR solicits innovative research projects that integrate knowledge from many levels of analysis (from genomics and circuits to behavior and self-report) to understand basic dimensions of functioning that span the full range of human behavior from typical to atypical, as outlined in the Research Domains Criteria (RDoC) framework.^{41,42} One dimension – social functioning – entails a broad array of social constructs (including perception and understanding of self and others, social communication, and affiliation and attachment) that exhibit substantial heterogeneity in the population. Understanding variability in social functioning, including variability related to perceived social isolation,⁴³ across levels of analysis can provide insights into the etiology and pathophysiology of mental illness. The RDoC framework also promotes a systematic focus on the environment when considering individual neural circuits and functioning, acknowledging that social and physical environment – including the size of one's objective social network – confer both risk and protection for mental illness, but may also be shaped by the nature of mental illness. Finally, the RDoC framework explicitly considers how dimensions of functioning changes across the lifespan, including the impact of aging.

This approach to considering social interactions as part of the environmental context is consistent with the strong recognition across NIMH and the National Institutes of Health (NIH) more broadly that social

and environmental factors play a critical role in health and health disparities.^{44–46} A central cross-cutting theme of the NIMH 2020 strategic plan for research (<https://www.nimh.nih.gov/about/strategic-plan/ning-reports/index.shtml>) is understanding how environmental influences that vary within and across populations – including social factors – interact with or affect biological systems important in regulating mental processes and other functions of the body. NIMH’s commitment to supporting research on the impact of social disconnection on mental health is evidenced by its participation in funding opportunities supporting research on the impact of social connectedness and isolation on health, as well as other efforts to understand emotion regulation throughout the lifespan and its impact on mental health and disease. These include the recent Notice of Special Interest in administrative supplements and urgent competitive revisions for mental health research on the 2019 Novel Coronavirus, which lists as areas of special interest the interactions between stress and social isolation on symptomatology, as well as research to identify potential intervention targets for modifying social connectedness, isolation, and/or loneliness via social media and/or electronic communication to prevent the development of clinically significant mental health symptoms (NOT-MH-20-047). NIMH also participates in funding opportunities led by the Office of Behavioral and Social Sciences Research (OBSSR) that address “Research on Biopsychosocial Factors of

Social Connectedness and Isolation on Health, Well-being, Illness, and Recovery” (NOT-OD-20-103).

The Geriatrics and Aging Processes Research Branch within DTR supports research to better understand the etiology, pathophysiology, and course of mental disorders of late life, the relationships between aging and mental disorders, the treatment and recovery of persons with aging-related mental disorders, and the prevention of these disorders and their consequences. To translate basic knowledge into new methods for diagnosis, treatment, and prevention of mental illness demands appreciation for the broader milieu of social and environmental factors in which mental illness prevails – of which, social connection or disconnection is one. As this special issue highlights, the mental health impacts, consequences, and correlates of social isolation are evolving areas of science. Important issues remain to be addressed, and the NIMH is committed to supporting this area of research.

AUTHOR CONTRIBUTIONS

All authors (EAN, LMR, JDE) contributed to the writing this commentary and approve of its publication.

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Social Disconnection in Late Life Mental Illness – Commentary From the

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