The Consequences of Menopause on Women's Cognitive Functioning

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Problem Statement

All women undergo the menopause transition. According to Mosconi et al, menopause is a "neuro-endocrinological process that impacts aging trajectories of multiple organ systems including the brain."[1] The authors describe how menopause is both a reproductive transition state and a neurological transition "as evidenced by the fact that many menopausal systems are neurological in nature such as hot flashes, disturbed sleep, mood changes, and forgetfulness." Morgan and colleagues point to the ever-growing public health concern of cognitive decline and dementia.[2] Specifically, the authors note, "evidence suggests that midlife may be a critical period in the natural course of dementia. For women, understanding the effects of reproductive aging on cognition in midlife and beyond remains a topic of great interest, particularly given that estrogens are involved in a number of cellular pathways that underlie brain function." The authors also posit the idea that perimenopause may be a "therapeutic window" where hormone therapies could possibly prevent cognitive decline in a woman's later adult life.

Reuben et al conclude that "subjective cognitive decline and the loss of ovarian hormones after menopause have been independently linked to later-life Alzheimer's disease."[3] The authors discuss that several studies have found that "cognitive complaints increased across the menopause transition and were associated with reductions in attention, verbal and working memory… Women taking estrogen-decreasing treatments also had increased cognitive complaints and reduced working memory and executive function."

Status of the Literature

All women undergo menopause, though the experience may happen in different ways: through the natural aging process, by the surgical removal of the ovaries, or as medically-induced menopause that occurs due to radiation therapy and/or chemotherapy. The most widely-believed classic symptoms of menopause are hot flashes and a decreased sex-drive. While these are prominent symptoms of menopause transition, they have become stereotypes that draw attention away from changes in women's brains such as brain fog, lack of focus, and difficulty with word finding. In her 2019 TED talk, Lisa Mosconi notes that both a woman's ovaries and her brain are connected through the neuroendocrine system, and that the "estrogen produced by the ovaries is critical to providing energy to the brain."[4]

Other common symptoms related to estrogen loss result in mood disturbances. Depression and anxiety are more likely to occur after a woman has completed menopause. In their systemic review and meta-analysis, Georgakis et al found that "early menopause is a risk factor for depression in postmenopausal women."[5] A further finding is that "women's age at menopause has been inversely associated with the risk of cardiovascular disease." Women who experience menopause prematurely (<40 years of age) are 3 times more likely to develop multi-morbidity disease, including heart disease, in their 60s.

One of the most notable factors for post-menopausal women is an increased risk for developing dementia and Alzheimer's disease. McCarrey and Resnick state that "observational results from longitudinal studies of surgical menopause indicate that both young and old

women who have undergone bilateral oophorectomy carry an increased risk of cognitive impairment and dementia, as well as reductions in global cognition and memory."[6] While their study focuses mostly on the surgical initiation of menopause, they assume women who undergo menopause naturally will experience the same affects.

Call to Action

For social workers employed in the medical field, it is vital to know and understand how menopause is linked to dementia and Alzheimer's disease. Part of a social worker's responsibility is education. Social workers should educate others in the medical field, including other social workers as well as physical therapists, dieticians, etc, to not only increase their knowledge on the subject but to enable them to share this information with their patients. This knowledge has the potential to impact the lives of women by improving the quality of life in later years. It is evident in the medical literature that compared to men, women are at an increased risk of cognitive decline and dementia. Major stressful events have been associated with the onset of Alzheimer's disease at a younger age, and women seem to have a more abrupt increase in cortisol levels after stress than men, which is even higher in older individuals. Also, "neuroinflammation, which is an emerging Alzheimer's disease pathological feature, has been proposed as a potential mediator to the estrogen depletion effects on cognition" (Georgakis et al 2016). It is critical to know the many health risk factors that may influence the risk for dementia and Alzheimer's disease. An individualized health risk assessment is necessary to determine a woman's risk for cognitive decline in her later years. Based on this assessment, a woman may be a good candidate for menopausal hormone therapy, which could exert neuroprotective effects in the aging process, thus increasing her quality of life.

References

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