



The role of gender in the relationship between social engagement and health outcomes

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Dear Editor,

The paper titled “Social engagement and subjective health among older adults in South Korea: Evidence from the Korean Longitudinal Study of Aging (2006–2018)” by Zhao and colleagues published in Volume 21, March 2023, 101341, is a timely article that emphasises the importance of social participation among older adults. This is highly relevant in the present times when the proportion of older persons is increasing rapidly worldwide.

In this study, the authors highlight the mutual relationship between social engagement and subjective health among older participants from the Korean Longitudinal Study of Aging (KLoSA) and point out that the social engagement has a greater impact on subjective health than subjective health on social engagement. The authors controlled for demographic variables, such as age, educational level, marital status and religion as well as some health-related variables. This commentary brings to attention the significant role that gender can play in social engagement and thereby, differentially influence the association between the social engagement and health.

Depending on the culture, gender influences the socialization process right from early childhood and its impact can be seen in later life. For example, a recent study in the United States found that boys were more socially isolated than girls during the most of their developmental stages, and this gender gap was significantly more pronounced in those who had never married and in those whose relationships had been disrupted (Umberson et al., 2022). Further, the prevailing social customs and religious beliefs are often associated with predefined gender roles in the society, which traditionally expect different patterns of social participation (Batra et al., 2016). In eastern countries like India, particularly in the rural setting, considerable gender inequality and discrimination exists, which is reflected as differences in educational levels, employment opportunities, social status and access to healthcare, between men and women (Brahmapurkar, 2017). Therefore, gender could significantly confound the relationship between social

engagement and health. However, research on this topic is very limited. A previous study found that older males who had poor physical or cognitive health were less likely to be as socially engaged later whereas older women who are more involved in social activities had better physical and cognitive health (Thomas, 2011).

Our study was conducted with the aim of investigating the role of gender in social engagement among 2403 cognitively healthy participants aged 45 years and above, belonging to an ongoing, prospective, aging cohort in rural India (Srinivaspura Aging, NeuroSenescence, and COGnition, SANSCOOG study cohort). The hypothesis of this study was that significant differences exist in the social networking patterns between older men and women.

Social networking was assessed utilizing the Cohen’s Social Network Index (SNI), which assesses social networking in three dimensions: (i) network diversity (number of social roles in which the participant has regular contact with at least one person, (ii) number of people in social network (the total number of people in all the possible social roles with whom the participant has regular contact), and (iii) number of embedded networks (number of different social network domains where a participant is actively engaged i.e. there should be at least four high-contact people within each domain). Each of the above three dimensions are scored separately, with higher scores indicating better social participation. The mean scores in each of the SNI dimensions were calculated for men and women separately and compared using t-test, and a p value of <0.05 was considered significant.

The mean age of our study participants was 56.39 years (SD = 9.08). The mean age among women (n = 1076) was 54.30 years (SD = 8.49) and among men (n = 1449) was 57.94 years (SD = 0.19). Our findings revealed that men had significantly higher mean scores as compared to women in the dimension of ‘network diversity’ (men: 6.05 ± 1.52 vs. women: 5.78 ± 1.70 , $p = 0.001$), whereas in the dimension of ‘number of embedded networks’ the reverse trend was observed (men: 1.95 ± 1.12 vs. women: 2.13 ± 1.17 , $p = 0.001$). However, there were no significant gender difference in the dimension of ‘number of people in the

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social network', (men: 20.38 ± 9.25 vs. women: 20.26 ± 8.58 , $p = 0.76$). Therefore, this study highlights that gender could affect social engagement differentially among aging, rural Indians (in our study, men had greater number of social networks whereas, females were more actively engaged in different network domains such as family, friends, school, work, neighbours, volunteering, religious and non-religious groups).

In addition to the impact of social engagement on subjective health, as brought out by Zhao and colleagues, social engagement can also have a specific effect on cognitive health. The recent report of the Lancet Commission on Dementia Prevention, Intervention and Care has identified social isolation as one of the 12 potentially modifiable risk factors for dementia, with the population attributable fraction for social isolation ranging between 3 and 5.7 % (Livingston et al., 2020).

It is well known that there are significant gender differences in the prevalence of dementia as well as its risk factors. In general, women have a higher prevalence and lifetime risk of dementia (Seshadri et al., 1997), and this has been mostly attributed to their longer lifespan. However, a recent study revealed that men had a higher risk of midlife dementia and a lower risk of late-life Alzheimer's disease than women (Brady et al., 2023). In this backdrop, our finding of gender differences in the patterns of social participation is highly relevant as this could mean that the risk conferred by social isolation could potentially be different between men and women. This, in turn, implies that the kind of interventions required to minimize this risk also needs to be tailored according to gender.

In conclusion, the study by Zhao et al. as well as our study imply that it is vital to create awareness on the importance of active social engagement and including social interventions as a significant component in healthcare. Among elderly persons, better social connections can reduce stress, promote healthier lifestyles and thereby, promote both cognitive and general health. Further research through long term follow-up studies is needed to confirm the modulating role of gender in the association between low social engagement and dementia risk. Interventions to improve social engagement among aging persons, which consider the role of gender and local cultural factors need to be developed to preserve cognitive functions and prevent dementia. It is important that these interventions should be cost-effective and easily implementable at the community level, so that they can be integrated into national policies to promote healthy aging.

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Ethical statement

SANSCOG study has been approved by the Institutional Ethics Committee of the Centre for Brain Research. Written informed consent was obtained from the participants to voluntarily participate in the study. All investigators and research staff adhered to the guidelines laid down by the Declaration of Helsinki.

Declaration of competing interest

All authors declare no conflict of interest.

Data availability

The data that has been used is confidential.

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