

The impact of social support on the relationship between physical exercise and cognitive function in the elderly: a sociological perspective

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Abstract

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Original Manuscript

The impact of social support on the relationship between physical exercise and cognitive function in the elderly: a sociological perspective

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Dear Editor,

Our research team recently read your article "Relationship Between Physical Exercise and Cognitive Function Among Older Adults in China: Cross-Sectional Population-Based Study" and was deeply touched. Through rigorous data analysis and detailed research methods, this article reveals the significant relationship between physical exercise and cognitive function in the elderly, providing important theoretical and practical reference for the research field of public health and aging.

Firstly, the rigor and scientific of this paper in terms of study design and data analysis. Using data from the Chinese Social Survey of Aging (CLASS), the authors carefully explored the relationship between different exercise intensities and cognitive function through multivariate regression analysis. The results showed that physical activity levels of 500 to 1499 metabolic equivalent (MET) minutes per week were significantly and positively associated with higher cognitive function scores, a finding that provides an empirical basis for cognitive health intervention strategies in older adults.

However, this paper also has some limitations. The study had a cross-sectional design, which means that a causal relationship between exercise and cognitive function cannot be established. Second, the data mainly rely on self-reports and may be subject to some reporting bias, and these factors may have a significant impact on cognitive function.

From a sociological perspective, future research could delve into the moderating role of social support in the relationship between physical exercise and cognitive function in older adults. Social support includes support from family, friends, community and other levels, which can significantly affect the mental health and quality of life of the elderly¹. At present, some studies have explored the impact of social support on the health of the elderly from a sociological perspective^{2,3}. Good social support can significantly improve the quality of life of the elderly and slow down the process of cognitive decline. In addition, participation in community-organized physical activities can effectively improve cognitive function and mental health of the elderly^{4,5}.

Government and public health agencies should develop policies to encourage and support communities to build age-friendly sports facilities and activity places. At the same time, funding and resources should be provided to support community organizations in organizing regular health activities for the elderly. Through family education and publicity, family members' awareness of the importance of physical exercise for the elderly was improved, and they were encouraged to actively participate in and support the sports activities of the elderly. Communities should actively organize and promote various forms of physical activities for the elderly, such as tai chi, square dancing, and vigorous walking, and encourage the elderly to participate in volunteer activities to enhance their social ties and mental health.

Overall, we would like to thank your journal for publishing this important research paper that allows us to more fully understand the effects of physical exercise on cognitive function in older adults from a sociological perspective. We hope to see more such studies in the future to provide more scientific and comprehensive health intervention strategies for the elderly population.

Declaration of Competing Interest: The authors declare no conflicts of interest that pertain to this work.

References

1. Choi NG, Wodarski JS. The relationship between social support and health status of elderly people: Does social support slow down physical and functional deterioration? *Social Work Research*. 1996;20(1):52-63.
2. Schwarzer R, Leppin A. Social support and health: A theoretical and empirical overview. *Journal of social and personal relationships*. 1991;8(1):99-127.
3. Wang F, Gao C, Wang Y, Li Z, Zheng F, Luo Y. Relationship Between Physical Exercise and Cognitive Function Among Older Adults in China: Cross-Sectional Population-Based Study. *JMIR Public Health and Surveillance*. 2024;10(1):e49790.
4. Kelly ME, Duff H, Kelly S, et al. The impact of social activities, social networks, social support and social relationships on the cognitive functioning of healthy older adults: a systematic review. *Systematic reviews*. 2017;6:1-18.
5. Yeh S-CJ, Liu Y-Y. Influence of social support on cognitive function in the elderly. *BMC Health services research*. 2003;3:1-9.