

Are Five Frailty Compositions and Depressive Symptom Having Causal Relationship? Three-Wave Cross-Lagged Analysis

Yanhua Qu, SN

School of Nursing, Peking Union Medical College Beijing, China, Beijing, China

Purpose: Frailty and depressive symptoms are common comorbid conditions that have important impact on older adults. Few studies however have examined their causal relationship in elderly. This study aimed at identifying the developmental trajectory of the five frailty components and depressive symptoms in elderly, and also discovering the causal pathways between them of community elderly in the five year.

Methods: Data come from the China Health and Retirement Longitudinal Study (CHARLS). The analysis was based on three waves of data collected at the time of 2011, 2013, and 2015. Frailty was measured using Fried's phenotype, which includes weakness, slowness, exhaustion, inactivity, and shrinking; the 10-item Center for Epidemiological Studies-Depression Scale (CES-D10) was used to assess depression. A structural equation modeling (SEM) approach was implemented in four hypothesized cross-lagged models (M1, M2, M3, and M4) to evaluate the bidirectional relationships among the main variables. All hypothesized models were tested, and their goodness-of-fit indexes were compared to identify the best fitting model.

Results: The M5 (final model, optimized M4) chosen to represent the data showed the best goodness-of-fit indexes ($\chi^2(5)=0.519$, $p=0.991$, $RMSEA=0.000$, and $CFI=1$) among all hypothesized models. The final sample comprised 5440 elderly (50.5% female). The results showed that, when all people are treated as a whole, only slowness and exhaustion have causal relationship with depressive symptom, while other compositions were not significantly correlated. In addition, there were also differences between male and female. Slowness, weakness and exhaustion have causal relationship with depressive symptom in female, while only weakness have causal relationship with depressive symptom in male.

Conclusion: The results of this study offer insight into the relationship between depression and five frailty components among older adults during the 5 years. Furthermore, the findings in the current study to be able to easier and faster to find people at risk, it have important clinical implications. In addition, physical frailty should receive more attention in mental health care planning for older persons as well as its interference with treatment.

Title:

Are Five Frailty Compositions and Depressive Symptom Having Causal Relationship? Three-Wave Cross-Lagged Analysis

Keywords:

depressive symptom, five frailty compositions and old people

Abstract Summary:

Frailty and depressive symptoms are common comorbid conditions that have important impact on older adults. Few studies however have examined their causal relationship in elderly. This paper explores the causal relationship between the five frailty compositions and depressive symptom in a longitudinal study.

References:

- Ribeiro, O., Duarte, N., Teixeira, L., & Paul, C. (2018). Frailty and depression in centenarians. *Int Psychogeriatr*, 30(1), 115-124. doi:10.1017/s1041610217001910
- Rodrigues, R. A. P., Fhon, J. R. S., Pontes, M. L. F., Silva, A. O., Haas, V. J., & Santos, J. L. F. (2018). Frailty syndrome among elderly and associated factors: comparison of two cities. *Rev Lat Am Enfermagem*, 26, e3100. doi:10.1590/1518-8345.2897.3100
- Soysal, P., Veronese, N., Thompson, T., Kahl, K. G., Fernandes, B. S., Prina, A. M., . . . Stubbs, B. (2017). Relationship between depression and frailty in older adults: A systematic review and meta-analysis. *Ageing Res Rev*, 36, 78-87. doi:10.1016/j.arr.2017.03.005
- Veronese, N., Solmi, M., Maggi, S., Noale, M., Sergi, G., Manzato, E., . . . Stubbs, B. (2017). Frailty and incident depression in community-dwelling older people: results from the ELSA study. *Int J Geriatr Psychiatry*, 32(12), e141-e149. doi:10.1002/gps.4673
- Zou, C., Chen, S., Shen, J., Zheng, X., Wang, L., Guan, L., . . . Yang, Y. (2018). Prevalence and associated factors of depressive symptoms among elderly inpatients of a Chinese tertiary hospital. *Clin Interv Aging*, 13, 1755-1762. doi:10.2147/cia.S170346
- Buigues, C., Padilla-Sanchez, C., Garrido, J. F., Navarro-Martinez, R., Ruiz-Ros, V., & Cauli, O. (2015). The relationship between depression and frailty syndrome: a systematic review. *Aging Ment Health*, 19(9), 762-772. doi:10.1080/13607863.2014.967174

First Primary Presenting Author***Primary Presenting Author***

Yanhua Qu, SN
Peking Union Medical College Beijing, China
School of Nursing
student
Shijingshan District
Beijing
China

Author Summary: Yanhua Qu, come from Peking union medical college, Beijing, China. She is major in geriatric psychiatric nursing. Her research focuses on the relationship between geriatric mental illness and its adverse consequences and the nursing evaluation of geriatric mental illness.