RESEARCH
Original Research

Nutritional Status of Rural Older Adults Is Linked to Physical and Emotional Health

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ABSTRACT

Background Although nutritional status is influenced by multidimensional aspects encompassing physical and emotional well-being, there is limited research on this complex relationship.

Objective The purpose of this study was to examine the interplay between indicators of physical health (perceived health status and self-care capacity) and emotional well-being (depressive affect and loneliness) on rural older adults' nutritional status.

Design The cross-sectional study was conducted from June 1, 2007, to June 1, 2008.

Participants/setting A total of 171 community-dwelling older adults, aged 65 years and older, residing within nonmetro rural communities in the United States participated in this study.

Main outcome measures Participants completed validated instruments measuring self-care capacity, perceived health status, loneliness, depressive affect, and nutritional status.

Statistical analyses performed Structural equation modeling was employed to investigate the complex interplay of physical and emotional health status with nutritional status among rural older adults. The χ^2 test, comparative fit index, root mean square error of approximation, and standardized root mean square residual were used to assess model fit.

Results The χ^2 test and the other model fit indexes showed the hypothesized structural equation model provided a good fit to the data (χ^2 (2)=2.15; P=0.34; comparative fit index=1.00; root mean square error of approximation=0.02; and standardized root mean square residual=0.03). Self-care capacity was significantly related with depressive affect (γ=−0.11; P=0.03), whereas self-care capacity was not significantly related with loneliness. Perceived health status had a significant negative relationship with both loneliness (γ=−0.16; P=0.03) and depressive affect (γ=−0.22; P=0.03). Although loneliness showed no significant direct relationship with nutritional status, it showed a significant direct relationship with depressive affect (β=.4; P<0.01). Finally, the results demonstrated that depressive affect had a significant negative relationship with nutritional status (β=−.30; P<0.01). The results indicated physical health and emotional indicators have significant multidimensional associations with nutritional status among rural older adults.

Conclusions The present study provides insights into the importance of addressing both physical and emotional well-being together to reduce potential effects of poor emotional well-being on nutritional status, particularly among rural older adults with impaired physical health and self-care capacity.
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MAINTAINING GOOD NUTRITIONAL STATUS IS essential for healthy aging in rural America. Health promotion programming is one intervention practitioners can use to identify and monitor the health needs of rural older adults.[1] Previous research suggests that poor nutritional status among older adults is associated with decreased immune function, greater health care expenditure, and longer hospital stays.[2] Thus, it is vital to understand risk factors that may place older adults at greater risk of poor nutritional status.

The association between emotional well-being and nutritional status has been well documented.[3,4] Particularly, depression and feelings of loneliness have been identified as key risk factors for malnutrition among older adults.[3,5,6] Older adults with depressive symptoms tend to lose their appetite, refuse to eat, and experience weight loss.[7,8] Depressive symptoms are also associated with unhealthy food choices such as increased intake of foods high in added sugars and lower intake of fruits or vegetables.[9,10] In addition, loneliness can affect older adults' appetites, resulting in consumption of fewer regular meals, more frequent use of convenience foods, and decreased amount and variety of foods eaten.[3,11,12]

Poor emotional well-being among older adults is hypothesized to be a behavioral response to aging-related impairments that compromise physical health and impair self-care capacity.[13,14] Cohen-Mansfield and Parpura-Gill proposed a theoretical framework called Model of Depression and Loneliness (MODEL) based on the Cognitive-Behavioral Theory to explain the interaction between physical health status and emotional well-being.[14] In this theory, poor self-care capacity is strongly associated with feelings of loneliness among older adults.[14] Furthermore, poor self-care capacity can lead to restricted social activities, which can contribute to depressive symptoms among older adults.[15] In addition, Savikko and colleagues[16] reported that poor health status was a potential contributor to feelings of loneliness. Previous studies also have found a negative association between low perceived health status and depressive symptoms in community-dwelling older adults.[13,17] Empirical evidence suggests feelings of loneliness are also a strong predictor of depressive symptoms among socially isolated older adults.[18,19] Thus, the relationship between physical health and emotional well-being is complex and multifactorial.

Not only is poor physical health associated with diminished emotional well-being, it is also related to poor nutritional status among older adults.[20] Donini and colleagues[17] reported that older adults with impaired self-care capacity to grocery shop and prepare meals were at a greater risk of malnutrition. Thus, a vicious cycle can be generated where progressive functional decline, poor nutritional status, and emotional decline exacerbate each other.

Unfortunately, older adults residing in rural areas generally have fewer opportunities for social interaction. This is commonly due to geographic isolation and out-migration of younger adults who serve as supportive resources.[21] Due to this limited social engagement, older adults living in rural areas are more likely to experience feelings of loneliness and depressive symptoms.[22] Studies have reported that older adults residing in rural areas have higher rates of depressive symptoms than those living in urban areas.[23,24] In addition, rural older adults have been reported to face a greater number of chronic conditions and impaired self-care capacity than older adults residing in urban areas.[25]

Although nutritional status is influenced by multidimensional aspects encompassing physical and emotional well-being, there is limited research on this complex relationship.[26] Identifying the interplay of these factors on rural older adults' nutritional status can serve as a basis for development of nutrition education programs to improve nutritional status.

Cohen-Mansfield and Parpura-Gill[14] developed the theoretical model to examine predictors of loneliness among low-income older adults, including physical health and emotional well-being variables. Therefore, this study extended upon MODEL to further inform the associations among physical health (perceived health status and self-care capacity) and emotional well-being (depressive affect and loneliness), along with the addition of nutritional status, among rural older adults.

The following hypotheses (H) and expected outcomes of the investigation included (Figure 1):

- H1=lower self-care capacity will have a direct negative relationship with depressive affect.
- H2=lower self-care capacity will have a direct negative relationship with loneliness.
- H3=lower perceived health status will have a direct negative relationship with loneliness.
- H4=lower perceived health status will have a direct negative relationship with depressive affect.
- H5=higher loneliness will have a direct negative relationship with nutritional status.

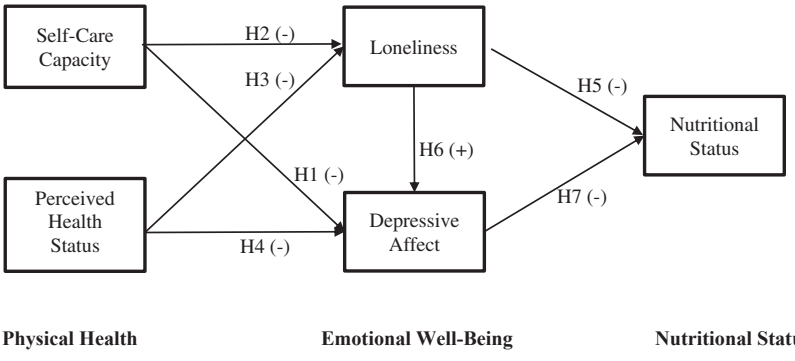

Figure 1. Proposed structural equation model for the relationship of physical health, emotional well-being, and nutritional status. Hypothesis (H) 1=lower self-care capacity will have a direct negative relationship with depressive affect. H2=lower self-care capacity will have a direct negative relationship with loneliness. H3=lower perceived health status will have a direct negative relationship with loneliness. H4=lower perceived health status will have a direct negative relationship with depressive affect. H5=higher loneliness will have a direct negative relationship with nutritional status. H6=higher loneliness will have a direct positive relationship with depressive affect. H7=higher depressive affect will have a direct negative relationship with nutritional status.