

Feature Article

Factors that influence physical function and emotional well-being among Medicare-Medicaid enrollees



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A B S T R A C T

Keywords:
Medicare-Medicaid enrollees
Disparities indicators
Subjective well-being

Dually enrolled Medicare-Medicaid older adults are a vulnerable population. We tested House's Conceptual Framework for Understanding Social Inequalities in Health and Aging in Medicare-Medicaid enrollees by examining the extent to which disparities indicators, which included race, age, gender, neighborhood poverty, education, income, exercise (e.g., walking), and physical activity (e.g., housework) influence physical function and emotional well-being. This secondary analysis included 337 Black (31%) and White (69%) older Medicare-Medicaid enrollees. Using path analysis, we determined that race, neighborhood poverty, education, and income did not influence physical function or emotional well-being. However, physical activity (e.g., housework) was associated with an increased self-report of physical function and emotional well-being of $\beta = .23$, $p < .001$; $\beta = .17$, $p < .01$, respectively. Future studies of factors that influence physical function and emotional well-being in this population should take into account health status indicators such as allostatic load, comorbidity, and perceived racism/discrimination.

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Introduction

The average cost of care for older adults dually enrolled in Medicare-Medicaid in 2008 was nearly twice as much as Medicare-only recipients in 2008.¹ In addition to significant monetary cost to society, there was considerable physical burden and diminished quality of life for the Medicare-Medicaid population. Further, data indicate that there were marked disparities between the two groups in terms of race, ethnicity, and gender. Forty-four percent of the dually enrolled patient population had physical function impairments compared to only 26% of the Medicare-only patients, and 58% of the dually enrolled reported mental health

problems associated with emotional well-being compared to 25% of the Medicare enrollees.¹ Lower income Medicare-Medicaid enrollees were also disproportionately more likely to be African American, Hispanic, female, and/or have less than a high school education.²

Factors known to influence physical and mental health outcomes in older adults include race, gender, age, amount and type of physical activity, chronic disease, and adaptation to physical and emotional stressors.^{3–5} Additionally, but not always, environmental factors such as structural barriers and personal safety influence physical activity in older adults.^{6–8} Given the multiple biopsychosocial factors that impact health outcomes, we applied House's Conceptual Framework for Understanding Social Inequalities in Health and Aging⁹ to a group of dually enrolled Medicare-Medicaid older adults to examine the relationship between physical function and emotional well-being.

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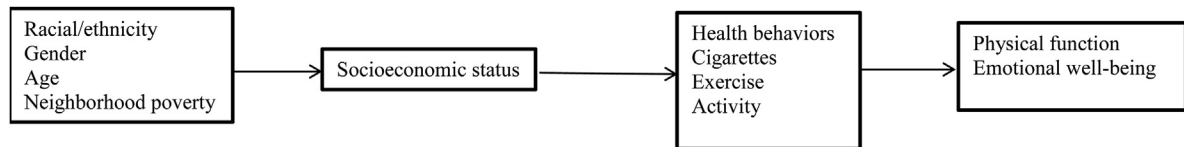


Fig. 1. Conceptual framework for factors that influence physical function and emotional well-being in Medicare-Medicaid older adult enrollees. This figure was modified using concepts from House (2002).

Conceptual framework

Specifically, House's conceptual framework posits that race, gender, age, environmental stressors (neighborhood poverty), and health behaviors result in poor health outcomes (e.g., functional limitations and diminished emotional well-being). This conceptual framework is grounded in theories of psychosocial stress, social inequalities, and personality theory (e.g., Type A) that contribute to disease and result in poor health outcomes (e.g., morbidity, disability, depression). In House's conceptual framework, a person's socioeconomic status (SES) mediates the effect of race/ethnicity on health outcomes (Fig. 1). As seen in the literature, persons with lower education and income levels smoke more and exercise less compared to those of a higher SES.^{10–12}

Health behaviors (e.g., smoking, physical inactivity) are known as *explanatory variables* that are associated with health outcomes. Using factors from House's conceptual framework, we examined the associations between race, gender, age, neighborhood poverty, education, and health behaviors (i.e., smoking, exercise, and physical activity) with physical function and emotional well-being in Medicare-Medicaid enrollees. The findings from this study can be used to guide interventions focused on optimizing function and mental health in low-income minority older adults.

Methods

Design

A secondary analysis was conducted using data from the After Discharge Care Management of Low-Income Frail Elderly (AD-LIFE) trial.^{13,14} AD-LIFE was a randomized control care management study that included adults 65 and older who were eligible for both Medicare and Medicaid, had 1 or more deficits in activities of daily living (e.g., bathing, dressing, preparation), 2 or more deficits in instrumental activities of daily living (e.g., medication administration, managing finances, transportation), and at least 1 chronic condition (e.g., arthritis, diabetes, hypertension). The secondary analysis study was approved by the Summa Health System's Institutional Review Board (IRB) and The University of Utah's IRB.

Sample

Data from individuals who had participated in the AD-LIFE trial, aged 65 and older and enrolled in both Medicare and Medicaid, were included. AD-LIFE participants were recruited during their acute hospital admission. The paper by Allen et al, describes further detail of the recruitment process.¹³

Measures

Demographic variables included Race, gender, age, education. Participant education level was categorized into a range of 1 (none) to 6 (graduate degree) as described in Table 1.

Health behaviors were obtained based on interview and included (a) the participant's subjective report of the number of

cigarettes smoked per day (range 0–100); (b) the amount of time spent in exercise, as defined by the participant (e.g., walking, swimming); and (c) overall physical activity (e.g., household chores, gardening). Participants were asked to describe what kinds of formal/structured exercise and physical activity do you participate in and for how many minutes per week. Physical activity and exercise were both self-reported as minutes per week.

Neighborhood poverty and income data were obtained from the American Community Survey 2010 United States census data using Esri's ArcGIS 10.0 desktop software to spatially link participant addresses to the corresponding census tract. Specifically, neighborhood poverty was defined as the percentage of households in (\$10,830 or less per 1 person household in the year 2010) in each participant's census tract whose income in the past 12 months was at or below the poverty guideline.¹⁵ The poverty guideline was adjusted for larger households (\$22,050 or less for a family of 4 in year 2010). Yearly income based on the participant's self-reported occupation prior to retiring was included in the AD-LIFE data instead of yearly income. Therefore, we used the participant's preretirement occupation as a proxy for income using ACS data on the median income per occupation based on the census tract. This was expressed in U.S. dollars received annually.

Physical function and emotional well-being

Physical function and emotional well-being were evaluated using the 12-Item Short Form Health Survey (SF-12).¹⁶ The SF-12 measures health-related quality of life and was composed of two component summary scores: the physical component score and the mental component score. The two scores included eight concepts: physical functioning, role limitations due to physical health, social functioning, bodily pain, general mental health, role limitations due

Table 1

Neighborhood poverty, education, income, health behaviors, and 12-Item Short Form Health Survey Instrument scores for physical function and emotional well-being ($N = 337$).

Variable	M (SD)	n (%)	Range
≤High school education		310 (80.2%)	
Smoker		53 (16)	
Cigarettes per day	12.08 (9.24)		1–40
Neighborhood poverty percentage	22.33 (14.26)		1.4–65.3
Income	37,157.32 (15,319.82)		9983–113,542
Physical activity minutes/week	50.30 (89.61)		0–840
Exercise minutes/week	72.23 (38.26)		0–210
SF-12 Physical components summary score	30.16 (8.72)		15.80–61.98
SF-12 Mental components summary score	38.15 (9.71)		12.45–59.40

Neighborhood poverty = percent of persons at or below poverty level in or near the subjects home. SF-12 median physical components summary score for aged 65–75 is 44.55 and aged 75+ is 41.09 on a 0–100 scale. The median mental components summary score for aged 65–75 is 53.99 and aged 75+ is 51.89 on a 0–100 scale (Ware, Kosinski, Turner-Bowker, & Gandek, 2007).

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