Person-Environment Fit and Functioning Among Older Adults in a Long-Term Care Setting


Key Concepts/ Context

Research conducted in different nursing homes (NHs) shows that the main focus of care in nursing homes is to meet the physical and medical care needs of residents with emphasis on basic care such as bathing, dressing, medication administration, nutrition, providing wound care, and other types of medically driven procedures, not on maximizing the function and time spent in physical activity. At the resident level, the barriers to engaging in functional and physical activity include cerebral vascular events, age, socio-demographic characteristics, morbidities that affect function, cognitive decline, delirium, depressed mood, poor perceived health status, lack of motivation, cultural expectations, pain, fear of falling, body mass index, and poly-pharmacotherapy. In addition, research shows that the physical environment plays a big role in engaging people in physical activity. Recently, effort has been made to change the culture of NH environments focusing on implementing a person-centered care environment through providing a homelike environment both structurally and philosophically. However, little is known about how the new homelike environment influences the relationship between the person and environment and its effects on functional performance and physical activity.

Methods

- The study used the social-ecological model (SEM) as a research framework for understanding the interrelations among diverse institutional/organizational and environmental factors that can influence function and physical activity of residents in NHs.
- A quasi-experimental method was used with repeated measurement for data collection.
SYNOPSIS

- Data was collected from 27 residents, among whom 16 were from Welcome Home (WH) and 11 from traditional nursing homes (TNH). Most were female and aged residents with a mean age of 87 years.
- The criteria for resident recruitment included residents aged 65 or older, had an expected three-month length of stay and life expectancy of six months, and had provided informed consent.
- If the resident’s Mini-Mental State Score (MMSE) was below 13, informed consent was obtained from a legal representative/healthcare proxy.
- Data collection was completed by research assistants who were blind to group assignment. All measures were completed at baseline and four months post baseline.
- The Housing Enabler (HE) was used to evaluate the impact of the relationship between the person and his or her environment and subsequently how P-E fit impacts function and physical activity.
- The Acti-Graph was used to measure the physical activity of residents: light, moderate, and heavy activity.
- An observation survey was done by certified nurse assistants (CNAs) by using the PAS-LTC instrument to record the type of activities and the amount of time the resident engaged during each shift.
- The study also assessed a patient’s self-care ability such as transfer and mobility, and sphincters (bladder and bowel) by using the Barthel Index (BI).
- Descriptive statistics as well as regression analyses were used to describe the environment and the sample and to consider the individual items within the environment that best explained the barriers.
- A repeated-measures analysis of variance was used to determine differences within both groups and between TNH and WH at baseline and four months.

Findings

- Overall there was a significant negative relationship between P-E fit score and Acti-Graph activity counts, but no relationship between P-E fit score and Acti-Graph step counts. This suggests that P-E fit may have a greater influence on overall physical activity (which includes functional activities such as bathing and dressing) as reflected by all counts of activity, but little influence on walking activity.
- There were no significant differences between WH and TNH in the HE sum score or any of the sub-scores except for the indoor component (e.g., bedrooms, kitchen, and living room).
- There were no differences between WH and TNH groups with regard to function or subjective reports of physical activity based on the BI.
- The WH units were smaller in size than the TNH units, making living space more accessible and more staff available to assist residents.
- Accessibility problems to reach cupboards and shelves in WH units were identified and accounted for higher HE indoor environment scores.
SYNOPSIS

- Communication barriers such as residents' inability to see their names or identify their rooms were also identified and accounted for higher HE indoor environment scores.
- The findings suggested that changing environments alone may not be sufficient to improve physical and functional outcomes for long-term care residents; rather, careful consideration of the barriers based on P-E fit should be considered.
- The findings also suggest that careful consideration should be paid to current trends focused on building long-term care settings that are more “person centered” and homelike because they may actually have a negative impact on function and physical activity.

Design Implications

- To improve P-E fit, kitchen cupboards and shelves should designed to be accessible and user-friendly for the residents.
- Placing recognizable pictures or decorations brought by each resident on doors at appropriate heights and providing adequate illumination to enable residents to see their names or identify their rooms may help to improve P-E fit.
- Simple and cost-effective modifications to the indoor environment, such as improving lighting, displaying signs that specifically promote active living, and providing physical activity stations throughout the facility may improve P-E fit.
- Designing safe and accessible sidewalks and stairs to the outdoors, as well as providing greenery and interesting destinations to encourage outdoor usage, along with adequate shade and seating so residents will feel comfortable outdoors may improve P-E fit.
- Educating and engaging staff, families, and residents to promote resident utilization of indoor and outdoor environmental resources may promote physical activity and functional independence.
- Before developing all units a mock-up of the setting to evaluate the P-E fit using the HE may help to identify and evaluate accessibility issues in the design of critical living spaces. With this approach homelike designs would allow residents to use areas such as kitchens and bedrooms as independently as possible and provide opportunities to increase function and physical activity.

Limitations

Limitations identified by author include:

- The study included only a small sample of residents at one facility that was in the early-adoption phase of culture change. This sample may not be reflective
of all new person-centered care models or the residents at facilities that have adopted them.

- The study used a matched control design rather than a randomized controlled design. Thus there may have been unmeasured differences between the groups as well as other threats to internal and external validity.

The reviewer identified additional limitations in the study, including:

- The study did not measure other factors that contributed to functional decline and decreased physical activity. Among these: cognitive status, mood, perception of health, coexisting disease states, fear of falling, cultural expectations, and environmental factors.