



KEY POINT SUMMARY

OBJECTIVES

This study had two objectives:

- To examine the life-space mobility of middle-aged and older adults during stages of initial use (1-6 months) and long-term use (12-18 months)
- To explore the key factors responsible for greater life-space mobility for middle-aged and older adults

Life-space mobility of middle-aged and older adults at various stages of usage of power mobility devices

Auger, C., Demers, L., Gélinas, I., Miller, W. C., Jutai, J. W., & Noreau, L. 2010 | *Archives of Physical Medicine and Rehabilitation*. Volume 91, Issue 5, Pages 765-773

Key Concepts/Context

The authors refer to literature to show that more older adults are depending increasingly on and using power mobility devices or PMDs for their independent mobility. Measuring the use of PMDs involves examining the life-space mobility of their users. The authors refer to literature where life-space mobility is defined as the area within which a person moves over time; it entails characterizing the distance travelled, the frequency of travel, and assistance (if any) availed by older adults. The authors indicate that there is no data on the changes in life-space mobility because of PMD use. In this study, people waiting to procure PMDs and PMD users were interviewed using the life-space assessment questionnaire and a tool, WhOM, to compare their life-space mobility and to explore factors that contributed to life-space mobility. The study found that life-space mobility changes after PMD use. The factors that affected life-space mobility were gender, the nature of activities intended by the user, and the type of device used.

Methods

For the first objective, the methodology involved a multi-cohort study that compared the life-space mobility of a reference group (people waiting to procure PMDs) and two PMD user groups (initial use [1-6 months] and long-term use [12-18 months]). To explore factors connected with life-space mobility, a retrospective study was conducted wherein data on assistive device, intervention, environment, and personal factors was collected from the two PMD user groups. Participants, who were eligible for funding for a PMD from the Quebec Ministry of Health and Social Services, Canada, were randomly recruited subject to their satisfying the eligibility criteria. The final sample consisted of 116 participants – 42 in the reference group, 35 in the initial user group, and 39 in the long-term user group. Data on life-space mobility was collected using the life-space assessment



DESIGN IMPLICATIONS:

After procuring PMDs, the life-space mobility of the users increased within their homes and outside. These findings imply that public outdoor spaces may be designed taking into consideration the space and navigability of varying PMDs – on sidewalks, corridors, etc.

questionnaire. The questionnaire asked for information about mobility habits of the participant in five environments or life-space levels: within the home, around the home, in the neighborhood, in town, and outside town. Data on personal, device, intervention, and environment factors was obtained from medical charts and the applications to the funding agency. Personal factors were assessed by WhOM (a tool that measures the intention to use the device). Participants were contacted over the phone and interviewed using the Life-Space Assessment and WhOM. Data was analyzed statistically.

Findings

With regard to life-space mobility across stages of use, the study found that:

- There was a difference in the frequency of outings in the neighborhood between the reference group and the PMD user groups.
- The life-space mobility of the PMD users was better than the reference group. There was not much difference in life-space mobility between the initial user and long-term user groups.
- The differences in mobility around the home were statistically significant ($p < 0.02$), with 74% of initial users and 82% of long-term users moving more than 4-6 times a week around the home as compared to 52% of the reference group. The spaces covered included building corridors, terraces, backyards, and driveways.
- There was a 37% difference in life-space mobility in the neighborhood between the PMD users and the reference group ($p < 0.001$). The space covered was approximately 1km from their homes.

With regard to the factors associated with life-space mobility after procuring PMDs:

- Personal and device-related factors were the only factors that explained the variance in life-space mobility between initial users and long-term users with a statistical significance.
- After controlling for the variance explained by age, walking, and transfer ability, women had significantly lower life-space mobility scores than men.
- PMD users who had higher domestic participation objectives – cooking, shopping, walking the dog, etc., had greater life-space mobility ($p = 0.04$).
- PMD users who maintained interpersonal relationships – visiting family, friends, participating in family activities, etc., also contributed to life-space mobility, though not significantly.

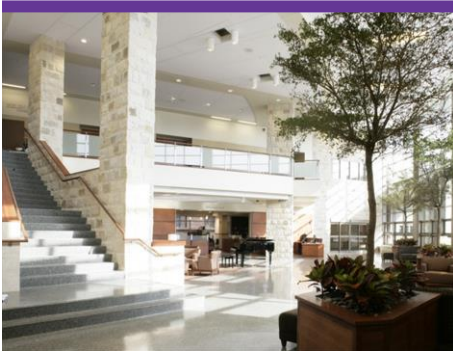


- Scooter use contributed significantly to the variance in life-space mobility ($p=0.003$).

Limitations

The limitations of this study identified by the authors were:

- The design of the study does not imply causality between age, domestic activity objectives, device type, and life-space mobility.
- Findings that were not significant could be because of the imprecision of data extraction from medical charts and application forms.
- Although the recruitment procedure was random, the reference group was not equivalent to the two user groups.
- The cross-sectional design of the research did not have the scope to study the intensity of PMD use and life-space mobility.



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