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BRIEF REPORT

Preliminary Examination of the Relation Between Participation and Confidence in Older Manual Wheelchair Users

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Abstract

Objective: To examine the relation between frequency of participation and confidence with using a manual wheelchair among community-living, older wheelchair users, and the moderating effect of sex.

Design: Cross-sectional.

Setting: Community.

Participants: Participants (N=54) who were community-living manual wheelchair users (65% men), were ≥50 years of age (mean, 59y), used their wheelchair daily, and had ≥6 months experience using a wheelchair.

Interventions: None.

Main Outcome Measures: The 16-item Late Life Disability Instrument and the 65-item Wheelchair Use Confidence Scale measured participation and confidence, respectively. Age, sex, and wheelchair skill measured using the performance-based Wheelchair Skills Test were included as covariates in the multiple regression models.

Results: Significant and positive relations exist between participation and (1) confidence (β=.83, P=.002) and (2) interaction term (β=.33, P=.05). The R^2 change associated with confidence was 10% (P=.02), and 6% (P=.05) for the interaction term. Subsequent regression analyses revealed that the magnitude of the relation between higher confidence and greater participation is stronger for men (β=1.05, P=.002) than for women (β=.44, P=.05).

Conclusions: Confidence with using a manual wheelchair is a positive and significant determinant of frequency of participation of older wheelchair users, after controlling for important covariates. Because the relation is moderated by sex, treatments addressing low confidence may lead to increased frequency of participation, especially for wheelchair users who are men.

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Participation is an individual's involvement in life situations.[1] It is characterized by a complex relation between an individual's health condition and the context in which the person conducts his or her life.[1] Because a high level of participation is important for better quality of life,[2] enabling participation in desired roles is an important rehabilitation focus.

Individuals with mobility disabilities are often faced with less than optimal participation and consequently have an increased risk of health issues, including depression.[3] Fortunately, manual wheelchairs are often prescribed to facilitate mobility and promote independent participation in various roles. However, older wheelchair users are more likely to report a lack of independence with

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using their wheelchair,[4] and they experience less than desirable participation levels because of increased participation restrictions associated with aging.[3] Thus, an issue in the study of this population is that despite knowledge of an increase in the prevalence of older wheelchair users related to aging, an insufficient amount of research has focused only on a limited number of determinants of participation, accounting for modest amounts of variance.[5,6]

Confidence with using a manual wheelchair is an emerging construct in the study of community-living, older wheelchair users.[7] According to social cognitive theory,[8] confidence is the belief individuals have in their ability to perform certain behaviors to achieve desired outcomes (for purposes of this article we use confidence and self-efficacy interchangeably). When considering the positive influence of various forms of confidence on important health-related behaviors among different patient populations,[8] it is plausible that confidence may have similar implications on the participation of older wheelchair users. Furthermore, on the basis of theory and research, confidence generally has had greater behavioral implications for men,[8] and thus the relation between confidence and participation may be stronger for men than for women. In this article we examine the relation between frequency of participation and confidence with using a manual wheelchair among older wheelchair users, and the moderating effect of sex. We hypothesized that confidence with using a manual wheelchair is positively and significantly related to frequency of participation in social and personal roles among community-living, older wheelchair users, and that the relation is moderated by sex, after controlling for age and wheelchair skill.

Methods

Study design

A cross-sectional study design was used to test the hypotheses.

Participants

A volunteer sample was recruited from the local rehabilitation research laboratory's contact database, various health authorities, and community groups. Participants had to be 50 years or older; live in the community; have at least 6 months experience using a manual wheelchair; use their wheelchair on a daily basis; be able to communicate in English; and have no cognitive impairment, as indicated by a score of 23 or less on the Mini-Mental State Examination.

Study protocol

Participants met once with 1 of 2 researchers who gathered demographic information, counted the number of health conditions, and administered the participation, confidence, and wheelchair skill measures. Ethical approval was obtained from the university and health authorities.

Measurement

The demographic information questionnaire gathered data on sex, age, marital status, time spent in a wheelchair daily, and years experience with using a wheelchair.

The Late Life Disability Instrument is a 16-item questionnaire that is reliable and valid for use with older adults.[9] It was used to evaluate the frequency of participation in social and personal roles using a response scale ranging from 1 (never) to 5 (very often).[9] Raw scores are transformed to scaled scores ranging from 0 to 100.[9]

The Wheelchair Use Confidence Scale is composed of 65 situations that challenge confidence with using a manual wheelchair.[5] It has recently been validated for use with wheelchair users.[7] Each item is scored using a response scale ranging from 0 (not confident) to 100 (completely confident). Total scores range from 0% to 100%.

The Wheelchair Skills Test 4.1 is a reliable and valid measure for use with wheelchair users.[10] It is composed of 32 skills of varying degrees of difficulty. A trained rater observes the completion of a wheelchair skill and either passes or fails the attempt. Total scores range from 0% to 100%, with higher percentages indicating better skill with using a wheelchair.

Data analyses

Descriptive statistics were used to characterize the sample. Hierarchical multiple regression analyses were used to test the study hypotheses. After centering the continuous variables, coding the sex variable, and creating a confidence-by-sex interaction term, the dependent variable, participation, was first regressed on age and wheelchair skills, then on sex and confidence, and finally on the interaction term. Weighted effects coding was used in the primary analyses to account for the fact that more men participated in the study than women. Dummy coding was then used to determine if the men's and women's simple slopes significantly differed from 0.

With a sample size of at least 50, up to 5 variables could be entered into the participation models.[11] All analyses were completed using SPSS version 19.0.[a]

Results

The sample (N=54) was mostly men (65%), had a mean age of 59.2 years, had mean experience with using a wheelchair of 23.9 years, and had a mean Wheelchair Skills Test score of 73.0. The mean number of health conditions was 2.4. Sample characteristics are presented in table 1.

Table 1 Sample characteristics (N=54)

Characteristic	Men (n=35)	Women (n=19)	All Participants (N=54)
Married or common law	17 (49)	6 (32)	23 (43)
Age (y)	59.9±7.4	57.7±5.6	59.2±6.8
Experience with using a wheelchair (y)	24.9±16.0	22.2±14.3	23.9±15.4
Time in a wheelchair per day (h)	12.8±4.6	11.9±5.3	12.5±4.8
Functional Comorbidity Index (0–10)	2.0±1.5	3.2±3.2	2.4±2.3
Late Life Disability Instrument (0–100)	54.2±7.8	51.8±8.6	53.4±8.1
Wheelchair Use Confidence Scale (0–100)*	86.8±10.7	72.1±23.2	81.6±17.5
Wheelchair Skills Test (0–100)*	77.7±11.5	64.4±16.0	73.0±14.6

NOTE. Values are mean ± SD or frequency (%).
* $P<.05$.