

Mobility and Transport

Mobility Device Use among Community-dwelling Older Adults: A Mixed-methods Comparison of the U.S. and China. X. Liu, S.E. Baumann, A.L. Rosso, E.M. Venditti, Y. Yao, S.M. Albert. *Gerontechnology* 25(s)

Purpose Mobility devices, including walking aids such as canes and walkers, and wheeled and seated mobility devices such as wheelchairs and scooters, are designed to enhance daily activities and social participation for individuals with mobility disabilities and are widely used by older adults worldwide [1]. Despite their importance, cross-national and cultural perspectives on mobility device use remain limited [2]. This study compared patterns of mobility device use, associated characteristics, user experiences, and attitudes among community-dwelling older adults in the United States and China. **Method** A mixed-methods approach with a convergent parallel design was applied, with quantitative and qualitative data collected and analyzed concurrently and compared cross-nationally. Quantitative analyses drew on harmonized, nationally representative data from the 2015 National Health and Aging Trends Study (NHATS) in the United States and the China Health and Retirement Longitudinal Study (CHARLS). Mobility device users were defined as current users of canes, walkers, manual or power wheelchairs, or scooters. Guided by the NHATS Late-Life Disability Framework, associated characteristics included personal factors, environment, health conditions, impairments and capacity, accommodations, and activities and participation. Survey weights, primary sampling units, and strata were incorporated to generate national-level estimates, and multiple imputations were employed to address missing data. Qualitative data were collected through semi-structured interviews conducted between August 2023 and December 2024 with older mobility device users in Pittsburgh, Pennsylvania, United States, and Beijing, China. Interview recordings were transcribed verbatim and translated into English by bilingual researchers. Template analysis was used to develop an initial codebook, with inter-coder reliability established between two coders. The finalized codebook encompassed themes related to user information, mobility device types, user experiences, and attitudes. **Results and Discussion** Quantitative analyses included 7,070 eligible NHATS participants and 6,259 CHARLS participants, representing 38.8 million and 141.3 million community-dwelling adults aged 65 and older in the United States and China, respectively. Older adults in the United States demonstrated a higher prevalence of mobility device use compared with those in China (22.2% vs. 16.3%, $P < 0.001$), particularly for walkers (9.9% vs. 0.5%, $P < 0.001$) and wheelchairs (5.0% vs. 1.9%, $P < 0.001$). In both countries, mobility device users were significantly more disadvantaged than non-users ($P_s < 0.001$). Sensitivity analyses indicated that U.S. users were more likely to be obese and to experience multiple chronic conditions, while Chinese users were more commonly engaged in work and caregiving tasks rather than recreational activities ($P_s < 0.001$). Qualitative analyses included 21 interviews with older mobility device users in China and 21 in the United States, covering experiences with a variety of mobility devices. Participants in both countries reported deficiencies in service provision, often acquiring devices informally through family or friends and lacking access to essential services such as needs assessment, fitting, training, and maintenance from qualified providers [3]. Participants in both countries encountered environmental barriers when using their mobility devices and adapted by using different devices in different settings. Compared with their U.S. counterparts, Chinese participants expressed stronger preferences for non-motorized and multifunctional devices, such as rollators and manual wheelchairs, which were valued both as assisted walking tools for exercise and as mobile seating options with storage capacity for carrying personal items. Findings highlight both global vulnerabilities and cross-national disparities in mobility device use in community settings among older adults [4]. Although older mobility device users in both countries face disadvantages and inadequate services in community settings, observed differences reflect variation in health conditions, cultural preferences, and system-level support. These results emphasize the need for culturally informed and context-specific strategies, as well as international collaboration, to strengthen mobility support for older adults worldwide.

References

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