Instrumental Activities of Daily Living as Early Indicator of Transition to Residential Care: Change Point Modeling of Home Care Recipient Pathways

by

Timothy V. Lukyn BA (Psychology), University of Victoria, 2001
M.Ed. (Community Rehabilitation and Disability Studies), University of Calgary, 2008

A PhD Dissertation Submitted in Partial Fulfillment
of the Requirements for the Degree of

DOCTOR OF PHILOSOPHY

in the Department of Psychology

© Timothy V. Lukyn, 2021
University of Victoria

All rights reserved. This thesis may not be reproduced in whole or in part, by photocopy or other means, without the permission of the author.
Abstract

Objective: The transition to long-term care (LTC) of older adults receiving home care services is preceded by declining functional independence with basic and instrumental activities of daily living (ADL and IADL, respectively). These individual, and group, level time-dependent changes occur within unique provincial and regional policy contexts across Canada, which determine the amount and types of services received by home care recipients during this transition period. It is currently unknown whether activities of daily living (ADL) or IADL (instrumental activities of daily living) exhibit accelerated decline preceding transition to LTC, and if so, whether the onset and rate of decline differs for ADL versus IADL. This dissertation sets out to determine whether such change points exist within longitudinal data gathered from home care recipients in Ontario during the years of 2008 to 2015.

Methods: A profile likelihood method was employed to identify the best fitting change points at which the slopes of functional decline in ADL and IADL for those who transition to LTC from home care services departs from the normative age slope of those who remain in community. Data analyzed was collected at approximately 6-month intervals using the International Residential Assessment Instrument – Home Care (RAI-HC) in Ontario, Canada, and was obtained from the Canadian Institutes for Health Information (CIHI) for the period of 2006-2015. A policy review was conducted to determine whether changes had occurred to the amount or type of home care services provided during the data collection period, and subsequently data from 2008 to 2015 were retained. IADL was measured using the 21-point IADL Involvement Scale and ADL was measured using the 28-point ADL Long Form. Best fitting change point models were first identified for ADL and IADL scores in the full sample of participants who remained in community and those who transitioned to LTC and within subgroups stratified by sex. Two additional subgroups were also examined: 1) participants without a primary or secondary caregiver living in the home, and 2) participants with a
primary caregiver living in the home. Each caregiver group was also stratified by sex, resulting in a total of 9 groups in which IADL and ADL change points were estimated and compared.

Results: In all groups who remained in community with home care services, age-related decline in IADL and ADL were observed. Further, IADL impairment was higher at the time of first assessment and had a greater age-related slope than ADL for those who remained in community. Both measures had discernable change points preceding discharge to LTC and the change point for IADL preceded that of ADL in all groups. Across groups, the change point for ADL had a range of 0.5 years before LTC discharge for men without a primary or secondary caregiver living in the home to 2 years for women with a primary caregiver in the home. IADL change points ranged from 2.5 years before LTC discharge for men with a primary caregiver in the home to 3.6 years for women without a primary or secondary caregiver in the home. Within the full sample, including both men and women, the onset of accelerated IADL decline for those discharged to LTC preceded the onset of home care service by 1.49 years and the time of first assessment by 1.84 years. Women in the full sample, and in both caregiver groups, experienced an earlier IADL change point relative to the availability of home care service when compared to men.

Conclusions: Both IADL and ADL have discernible change points for in the years preceding discharge from home care to LTC. The change point for IADL consistently precedes that of ADL for the entire sample, for those with or without a caregiver in the home and for both men and women. The onset of accelerated IADL decline in the presence of age normative ADL decline may be an early indicator of pending transition from home care to LTC for home care recipients identified in this study. The province of Ontario has committed to providing the right care, at the right time in the right place. This study demonstrates that home care policy in Ontario during this study period, which does not provide for IADL services until after patients first qualify for ADL services, may not be achieving the provinces commitment of ensuring IADL care is provided at the right time for recipients of home care services. Opportunities for early identification and intervention may be available through early monitoring of, and intervention with, IADL function. A stepped care model holds promise for early identification and intervention of IADL impairment in community living older adults. Future research will help to confirm if accelerating decline in IADL function in the absences of appropriate rehabilitation and support services may hasten the onset of accelerated ADL impairment and subsequent admission to LTC.