Activities of Daily Living in Residents of Nursing Home and Assisted Living Facilities: A Multilevel Analysis

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BACKGROUND AND PURPOSE

- The ability to perform ADLs is the most basic function for older adults in long-term care (LTC).
- Many personal and institutional factors can be associated with function in performing ADLs among LTC residents.
- It is imperative to understand the factors that influence function in performing ADLs using a multi-level perspective, so as to develop and implement effective interventions to maintain the highest level of function possible among residents.
- The purpose of the study was to: 1) explore the trajectory of function over time; 2) examine the variance in function that is attributable to individual and institutional variations; and 3) evaluate the impact of individual and institutional characteristics on function.

METHODS

- This study was a secondary analysis of longitudinal data of 788 residents from 8 Nursing Home and 16 Assisted Living facilities from 4 cluster-RCTs.
- Level 3: Facility level
  - type of facility
  - intervention type (function focused care vs. education)
- Level 2: Resident level
  - demographics (age, gender, race, education, marital status)
  - balance (subset of Tinetti Gait and Balance scale)
  - cognition (MMSE)
  - length of stay in LTC
- Level 1: time

RESULTS

- Variance in function
  - The 3-level RI model with both individual and institutional covariates achieved the best fit to the data. More than 78% of variance in function was accounted for by the resident (28%) and facility (50.5%) level variations. The covariates captured around 20% of the variance, mostly from the facility level (Figure 1).

- Factors at facility level
  - Function was 16.78 points lower among NH residents (95%CI = 10.36, 23.20) compared to AL residents, and such difference increased by .45 points per year (95%CI = .11, .78) between NH and AL residents (Figure 2).

- Trajectory of function
  - Function declined by .31 points on BI every year (95%CI = -.48, -.13).

- Factors at resident level
  - Function was 4.33 points higher among white residents than their non-white peers (95% CI= .04, .34) as residents aged by 1 year (Figure 3). Function decreased as years of education (Coef= -.14, 95% CI= -.20, .25), balance (Coef= -.22), and cognition (Coef = .57, 95% CI = .38, .76) increased (Figure 4), and as residents stayed longer in the facility (Coef=.88, 95% CI=.15, -.25).

CONCLUSION

- Implication for clinical practice
  - Pay attention to LTC population with higher risk of function decline:
    - Male, non-white, NH residents
    - Residents with impaired balance
    - Engaging residents in self-care and physical activities
  - Using exercise training strategies (e.g., resistance, endurance, balance, chair sit and stand) and mimicked movements used in everyday ADL tasks
  - Residents with cognitive impairment
  - Task-specific training techniques to enhance procedural memory and practice
  - Cognitive training

- Limitations
  - Sample was mostly women; mixed sample of residents with and without cognitive impairment in different studies
  - Limited number of resident and institutional variables

- Implication for research
  - Sample with more men distributed along the range of cognition
  - Additional data reflecting factors at inter-personal, institutional environment and policy levels

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REFERENCES