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Conference Abstract

Variation in service utilisation among the frail community dwelling elderly: implications for the design of integrated models of care.

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Abstract

Introduction: The challenge of healthy ageing today includes managing combinations of chronic disease, age related conditions, functional limitations and social or personal challenges. These needs are often referred in the gerontological and health sciences literature as 'complex needs' with multiple interacting problems. One way of examining those with complex needs is through the lens of the frail population.

Frail individuals experience an accumulation of health problems placing them at a higher risk of functional and cognitive decline, and vulnerable to using hospital and nursing home services (Fried, Ferrucci et al. 2004). Consequentially a significant body of theoretical and practical literature exists relating to models of integrated care to manage frail populations and shift care from hospitals to the community (Béland and Hollander 2011; Kodner and Kyriacou 2000).

However managing frailty may be more nuanced as we are beginning to understand that no two frail individuals are the same, and frail people will have different types and levels of needs and supports (British Geriatrics Society 2014). This challenges the appropriateness of designing integrated care models for frail populations based on a one-size-fits-all approach. We explored this issue by examining clusters in service use across the whole system of care among frail community-dwelling older adults in Ireland.

Methods: Data were taken from The Irish Longitudinal Study on Ageing (TILDA), a prospective cohort study representing the community-dwelling population aged over 50 years in Ireland (Kenny 2013). We sampled adults aged 65 years+ in wave one (2009/11) who were classified as frail (22%) according to the Rockwood Frailty Deficit Accumulation Index (n=841). Measures of service use in the year preceding data collection included count data for six GP and hospital services and binary data for sixteen community health and social care services.

We used latent class analysis (LCA) to model heterogeneity and classify individuals into homogeneous health service utilisation profiles, using the binary service use variables with the Bayesian Information Criteria (BIC) and substantive interpretability predicting the number of classes. LCA was performed using R software (version 3.1.2) with the BayesLCA package (White

and Murphy 2014). Descriptive statistics were employed to determine group averages of GP and hospital service use.

Limitations: TILDA community service data captures State provided services only and does not capture private community services. Consequentially we are not capturing total community service use.

Results: Three groups were identified with distinct patterns of health service use. "Group 1" (65%) had a substantially lower probability of use across all community services. "Group 2" (21%) had an overall much higher probability of using all services, particularly the services that support independent living. "Group 3" (14%) also had a higher probability of using all services, particularly those we commonly think of as restoring function.

Using these groupings, we looked at the differences in average use of GP and hospital services. In comparison to the other groups, Group 1 had the lowest mean number of GP visits and hospital services apart from day case procedures (1.2 visits). Group 2 had the highest average use of the GP (9.0 visits), Accident and Emergency Department (0.8 visits) and nights spent in hospital (20.5 nights). Group 3 by comparison had comparatively high GP use (8.9 visits) but had the highest use of outpatient visits (3.3 visits) and overnight hospital admissions (1.0 admissions).

Discussion: The data shows that Group 1 is quite distinct from Groups 2 and 3. The data in Groups 2 & 3 suggests that once an individual becomes "a" service user; they are more likely to become a user of additional services. Summary statistics on the groups revealed this same trend where Group 1 used services less on average by comparison to the other groups. Interesting differences were noted again between Groups 2 and 3 who varied in the intensity to which they used different hospital services. We will continue to unpick these patterns by exploring the demographic, social and health differences between the groups.

Conclusion: We know that the frail in comparison to the non-frail or pre-frail, use services more intensively. The merit in using the latent class analysis approach lies in its' ability to model unobserved heterogeneity in service use and cluster services used across the whole system of care. Using this approach we found variation in both the type and intensity of services used. This reveals the diversity in arrangements of care among the frail population and has implications for how we think about designing more integrated systems to deliver appropriate care in the most effective way possible to this diverse population.

Suggestions for future research: We are investigating the possibility of developing a model that can cluster the count data alongside the binary data to analyse the whole system of care simultaneously. Once that is completed we aim to follow these groups longitudinally to investigate the effects of group membership on service use and individual outcomes at wave two.

Keywords

integrated care; service utilisation; frailty

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