

Abstract

Guided by Andersen's model of health service use, this study assessed home and community-based services (HCBS) usage by older adults at imminent risk for nursing home placement and Medicaid spend-down in the Virginia Community Living Program (CLP). With two-step cluster analysis, we identified four distinct groups of service users. The most important variables that differentiated groups of service users were enabling resources such as caregiver relationship to participant, participant living arrangement, and length of time caregiver provided assistance to participant, as well as disability type. Between-cluster membership differed on average cost per day for services used and likelihood of nursing home placement if services were not provided.

Purpose

HCBS options address older adults' diverse needs, support family caregivers, and provide cost-effective alternatives to institutional care. Although identifying how many people receive HCBS is pretty straightforward, it is unclear when and why certain types of services are used. The purpose of this study was to identify distinct profiles of service users and determine whether certain service user profiles have greater potential to meet older adults' care needs. We addressed the following questions:

- What variables differentiate service user membership? What HCBS are used by older adults that naturally cluster around a set of specified variables?
- Does profile membership differ on outcome measures that assess perceived health status and program cost-effectiveness?

Sample & Method

Study Sample: Participants were enrolled in the Virginia CLP initiative, which targeted individuals at risk of nursing home placement and Medicaid spend-down. Analysis was based on responses of 76 participants who were enrolled in the CLP for 31+ days, purchased 2 or more services, completed the satisfaction survey. Their average age was 83.2 years old, nearly two-thirds were women and the majority identified as White, not Hispanic. Participants averaged 4.51 ADL limitations and 4.77 chronic health conditions.

Method & Analysis: We used 2-step cluster analysis, which determined 4 naturally occurring groups. One-way ANOVA was used to determine whether group membership affected program effectiveness and perceived health status.

Measurement Model: Andersen's behavioral model of health service provided theoretical guidance for selecting and explaining factors associated with service use.

POPULATION CHARACTERISTICS

- Predisposing**
 - Age
- Need**
 - Primary disability type
 - Number of ADL limitations
- Enabling Resources**
 - Living situation
 - Household income
 - Caregiver relationship to participant
 - Length of time (years) caregiving

HEALTH BEHAVIORS

- Use of Service**
 - Routine**
Personal Care, Companion/Homemaker, Personal Emergency Response System (PERS), Adult Day Care (ADC), Transportation, Home Delivered Meals, Assisted Living Costs
 - Intermittent**
Disposable Medical Supplies, Home Modification, Prescription Medications, Assistive Devices, Chore, Nutritional Supplements, Respite, Groceries, Dental Care

OUTCOMES

- Program Effectiveness**
 - average cost per day
 - existing unmet needs
- Perceived Health Status**
 - Likelihood of nursing home entry without CLP services
 - Likelihood of nursing home entry within the next 3 months

Results

Participants purchased 16 of the available 18 services with an average of 3.08 ($SD=1.33$; range 1-9). They most frequently selected routine service options of personal care services (PCS) and homemaker/companion services (63% and 49%, respectively). Only PCS use was significantly associated with membership differentiation ($p = .033$). The remaining 14 services were selected by less than 26% of all participants.

Four distinct groups of users (range of 7 to 34 members) were differentiated based on 4 variables: in order of importance, caregiver relationship to participant, participant living arrangement, participant disability type, and length of time caregiver reported providing care.

<p>Typical Older adults (Cluster 1)</p> <ul style="list-style-type: none"> 19 members (25.0% of overall study sample) Lived alone OR with their spouse Physical disability Adult child caregiver (for 1-4 years) Variability in household income Purchased 14 services (2.95 per member) <ul style="list-style-type: none"> Most frequently selected: <ul style="list-style-type: none"> Home modification, disposable medical supplies, chore services, assistive devices, and prescription medication (intermittent) Transportation (routine) 	<p>Living with Others (Cluster 2)</p> <ul style="list-style-type: none"> 16 members (21.1% of overall study sample) Lived with relatives Physical or cognitive disabilities Adult child caregiver (for 1-4 years or 5-9 years) Variability in household income Purchased 16 services (3.75 per member) <ul style="list-style-type: none"> Most frequently selected services: <ul style="list-style-type: none"> Assistive devices, disposable medical supplies, home modification, and respite (intermittent) PERS (routine)
<p>Greater Financial Resources (Cluster 3)</p> <ul style="list-style-type: none"> 34 members (44.7% of overall study sample) Lived with their spouse Cognitive disabilities for more than half of participants Spouse or adult child caregivers (for 1-4 years) More financial resources Purchased 15 services (2.79 per member) <ul style="list-style-type: none"> Most frequently selected: <ul style="list-style-type: none"> Prescription medication (intermittent) PERS, ADC, and transportation (routine) 	<p>Extended Kin/Friend Support (Cluster 4)</p> <ul style="list-style-type: none"> 7 members (9.2% of overall study sample) Lived alone Physical disabilities Other relative or friend caregivers (for 5-9 years or less) Higher range of household income Purchased 11 services (3.29 per member) <ul style="list-style-type: none"> Most frequently selected: <ul style="list-style-type: none"> Disposable medical supplies and assistive devices (intermittent) Home delivered meals (routine)

Key Differentiation of Service User Groups

Caregiving relationship

- adult child provided care for majority of *typical older adults* and those *living with others*
- fewer services were selected for older adults when caregivers were spouses ($M = 2.85$; $SD = 1.49$) compared to adult child ($M = 3.15$; $SD = 1.23$)

Living arrangement

- typical older adults* represented the most variability in living arrangement
- all members of *extended kin and friend support* group lived alone

Disability type

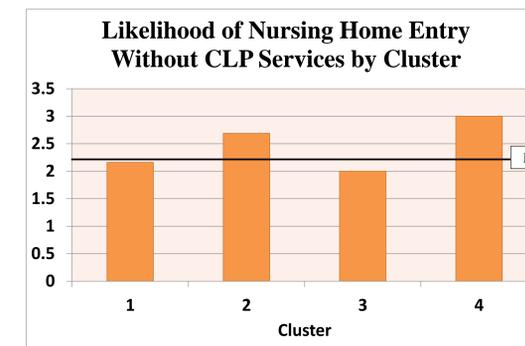
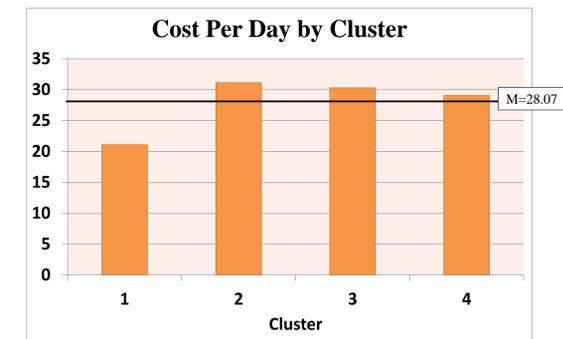
- no members of *extended kin and friend support* group reported cognitive disabilities (reflective of their 'living alone' situation)

Length of time providing care

- overall, participants relied on their caregivers for between 1 to 4 years

Group Differences on Outcome Measures

Program effectiveness was assessed using cost per day for services used and number of existing unmet needs. Between-cluster differences were significant for average service cost per day ($F(3, 72) = 5.530$, $p = .002$).



Members of the *extended kin and friend support* group reported a high likelihood of nursing home placement without CLP services than *typical older adults* and participants *living with others* ($F(3, 70) = 3.055$, $p = .034$).

Conclusion & Implications

Long-term services and supports have reached a crossroad to determine how preventive services can be incorporated efficiently in the delivery of aging services to vulnerable older adults. Many LTC policies were developed with the assumption that familial support is a reliable source of providing care for vulnerable older adults. Study findings suggest the necessity of formal services to supplement informal care provided outside of the realm of traditional family structures by:

- capitalizing on the strengths of informal caregiving by giving vulnerable older adults and their caregivers control over service selection and service providers
- targeting enabling resources of vulnerable older adults in selecting HCBS services to address their needs as a potential means to increase service use and influence reported outcomes
- encouraging service agencies to prioritize the widespread availability of HCBS such as PCS and homemaker/companion services to support aging-in-place

Older adults prefer to remain in their home, which requires a coordinated care system that addresses the diverse needs of older adults.

- Future research is warranted to uncover the complex interplay among individual needs, informal care, formal service use, and the long-term outcomes for both older adults and their caregivers.