Post-acute care support and health service environmental factors

Association with change in personal care and instrumental function

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Meijer et al's 2004 Review of Prognostic Social Factors

Stated the following:

- Research is needed into the prognostic qualities of the following social factors:
  - the ability to provide support
  - presence
  - readiness of the home-front
  - the availability of professional care
  - personal financial means
  - membership of societies and clubs
  - frequency of contacts with close relatives and friends
  - the quality of the patient's residence with regard to the adaptation to the needs and abilities of the patient
- A commitment to a conceptual framework is mandatory

Purpose of this study

To examine the association of environmental factors with change in functional activity over a 12 month period following acute rehabilitation

- **Outcome - specific domain of activity**: personal care and instrumental (A&P Ch 5/6 – self care and domestic life)
  - improvement, no change, decline
- **Specific environmental factors measured** at 3 time points in 12-months following baseline measurement in acute care:
  - living location – 9 categories (e5250, e5800, +)
  - living situation – 4 categories (e310, e315, e320/e340)
  - presence of nursing services (e355)
  - presence of therapy (e355)
  - functional social support (e575, e580)
  - structural social support (# available – e3xx)

BACKGROUND

Living Location/Situation & Function

- Not living at home pre-stroke was associated with worse 12-month functional outcomes *(Shen et al 2006)*
- Functional variables can be used to help predict follow-up living location *(Smith et al 2002)*
- Patients who were ADL-dependent and lived alone were 3 times less likely to improve in ADLs *(Mahoney et al 2000)*

Social Support & Function

- social isolation/low frequency of social contacts are associated with poor functional outcomes *(Lynch et al 1997; Moritz et al 1995)*
- association of marital status with function depends on other factors *(Stuck et al 1999)*
- greater frequency of support (i.e. tangible support including material aid or behavioral assistance), was associated with increased risk of subsequent disability among older men *(Seeman et al 1996 cited in Stuck et al 1999)*

Health Services Post-Acute Care

- Continuing outpatient rehabilitation services is strongly recommend for stroke patients
  - based on medical status, function, social support, and access to care *(Duncan et al 2005)*
- 6 months of extended outpatient rehabilitation that includes progressive resistance training can improve physical function and QOL, and reduce disability compared with low-intensity home exercise *(Binder et al 2004)*

Variability Across Previous Studies

- Lack of uniform definition for outcome (BADL/IADL/self-care/domestic domain)
- More specificity needed for defining environmental factors
- Different instruments used for measurement
- Difficult to identify the conceptual framework used to structure the study
- Different populations of focus

STUDY DESIGN

ICF Conceptual Framework: Application for this study

Neurological, lower extremity musculoskeletal, or medically complex conditions

Health Condition (disorder or disease)

Communication, Mobility, Self-care, Domestic, Mj. Life Areas, Interpersonal, Cmty., Social, Civic

Medical & sensory co-morbidity

Body Function & Structures ↔ **Activity** ↔ **Participation**

Personal Care & Instrumental

Sex, race, age, ethnicity, disease severity, perception of health

Personal Factors

Environmental Factors

Living Location, Living Situation, Social Support, Presence of nursing/therapy

Personal Care and Instrumental (PCI) Activity Measure-Post Acute Care

PCI AM-PAC developed to counter limitations of existing measures

- Assesses a broad range of functional activities
  - Upper-body dressing to housekeeping
- Encompasses activities in other measures – basic and instrumental activities of daily living (B/IADLs)
- Does not include mobility or communication items (included in other AM-PAC scales)
- Captures greatest range of abilities from acute care to at least 1-yr post-hospitalization
  - Reduces probability for floor/ceiling effects
- Measure across patient groups & health delivery settings

Coster et al 2004; Coster et al 2004; Haley et al 2004; Haley et al 2004; Coster et al 2006.

Rehabilitation Outcomes Study

- Secondary analysis of a prospective longitudinal study (1999 – 2003)
- Designed to examine the performance of the AM-PAC and a participation measure, the PM-PAC
- Personal interviews by a trained data collector
- ~45-60 minutes usually at subject's living location
- Baseline, 1-month, 6-months, 12-months
- Primarily self-report
  - medical record data: diagnosis, disease severity, LOS

Periods of Assessment & Analysis of Change

		Baseline	1-mo.	6-mo.	12-mo.
Longitudinal	Baseline to 1-month	Baseline			
	Baseline to 6-months	Baseline			
	Baseline to 12-months	Baseline			
Consecutive	Baseline to 1-month	1-month			
	1-month to 6-months		6-mo.		
	6-months to 12-mo.			12-mo.	

Sample Population

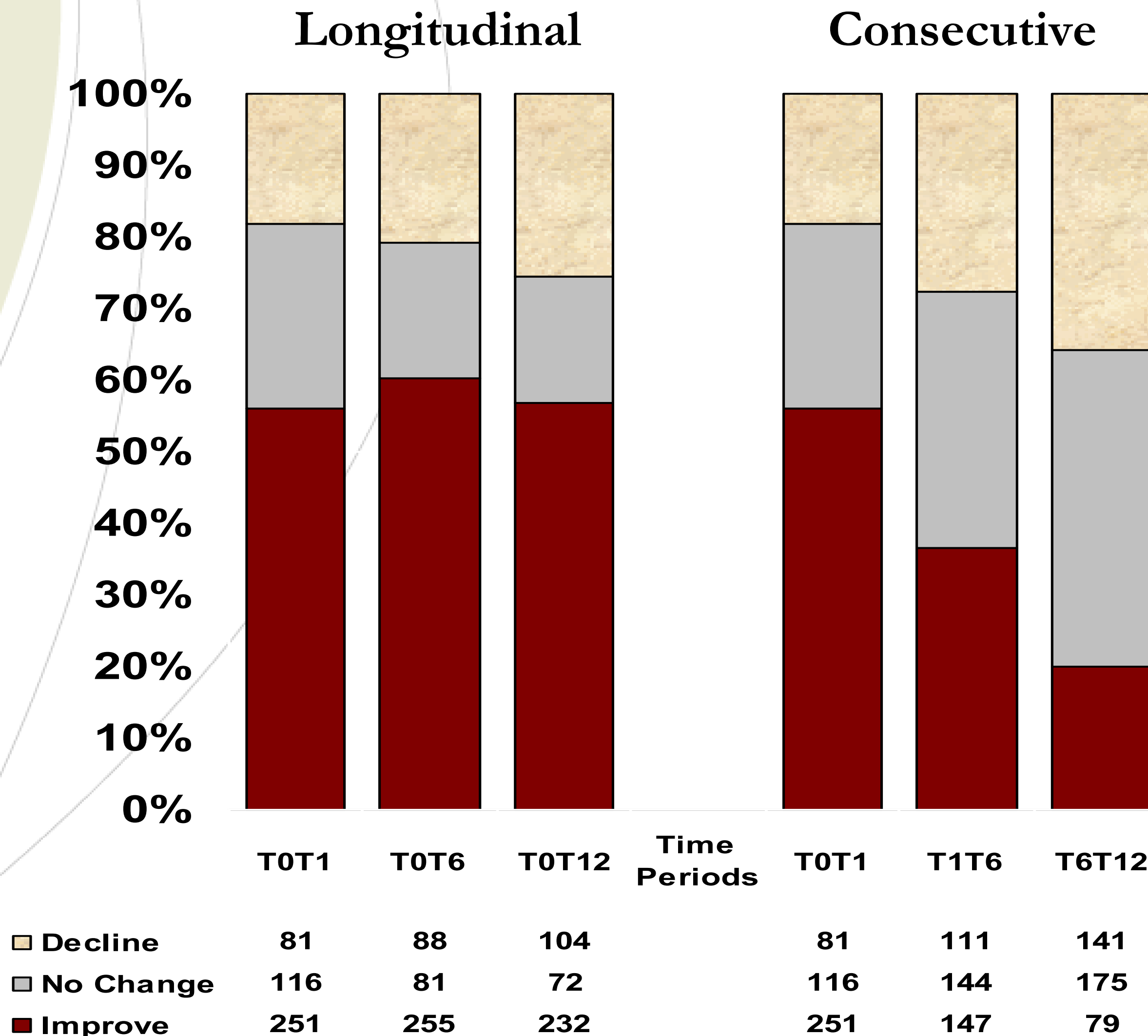
- Recruited 516 participants who were receiving acute rehab (hospital or IRF)
- Stratified to include 3 major patient groups
  - Neurological disorders (23.3%)
  - Lower extremity musculoskeletal disorders (32.4%)
  - Medically complex disorders (44.4%)
- Stratified to assure good representation of levels of functional severity (Modified Rankin)

The Population

- 516 subjects at baseline
  - 47 died over the course of the year
  - 29 become too ill to participate
  - 335 completed the study
    - 395-448 included for analysis depending on period
- Age range: 19-100
- LOS: 11.7 days (median = 7 days)
- More than 80% reported a medical co-morbidity
- 92.4% had been living at home prior
- Prior living situation:
  - 32.8% alone, 28.5% spouse only, 25.6% family, 3.1% non-family

FINDINGS

Comparing Patterns of Change



Fewer continued to improve over time

Decline group grew: 18 to 27 to 36%

44% made no further change after 6-months

Only 20% remained in the same trajectory of recovery over 12 mo.

Environmental Factors Associated with Change in PCI Over Time

<u>Baseline to 1-month</u>

- Individuals who did not receive therapy in the month following acute care were more likely to decline

<u>1-6 months</u>

- Participants who reported presence of nursing services were less likely to improve
(Adj. OR 0.31 CI 0.12, 0.85)
- Participants were more likely to improve with greater functional social support
(Adj. OR 1.02 CI 1.00, 1.04)

<u>6-12 months</u>

- The six social support variables were not significant with improvement or decline from 6-12 months following acute care

Another Look at the Factors Examined

- Social supports in the first month following acute care were not associated with improvement or decline
- Living location and situation post-acute care were not associated with improvement or decline over 12-months; however, living at home prior to hospitalization predicted participants were twice as likely to improve over 6 months (Adj. OR 2.2 CI 0.6, 3.8)
- The 6 factors examined were not significantly associated with recovery from 6-12 months

In Conclusion...

- The six support and health service environmental factors examined were not consistently associated with recovery in PCI over a 12-month post-acute care period
- Consider:
  - Variability of recovery patterns experienced by this sample
  - Heterogeneous population
    - wide range in age
    - many diagnoses
    - wide range in amount of improvement and decline
  - Longitudinal rehabilitation population cohorts might be better assessed and described by period of transition
  - Hybrid of quantitative and qualitative methods needed to gain patient (and caregiver) insight

Questions when time permits.

Thank you