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Paese vecchio, assistenza nuova: il caso Italia

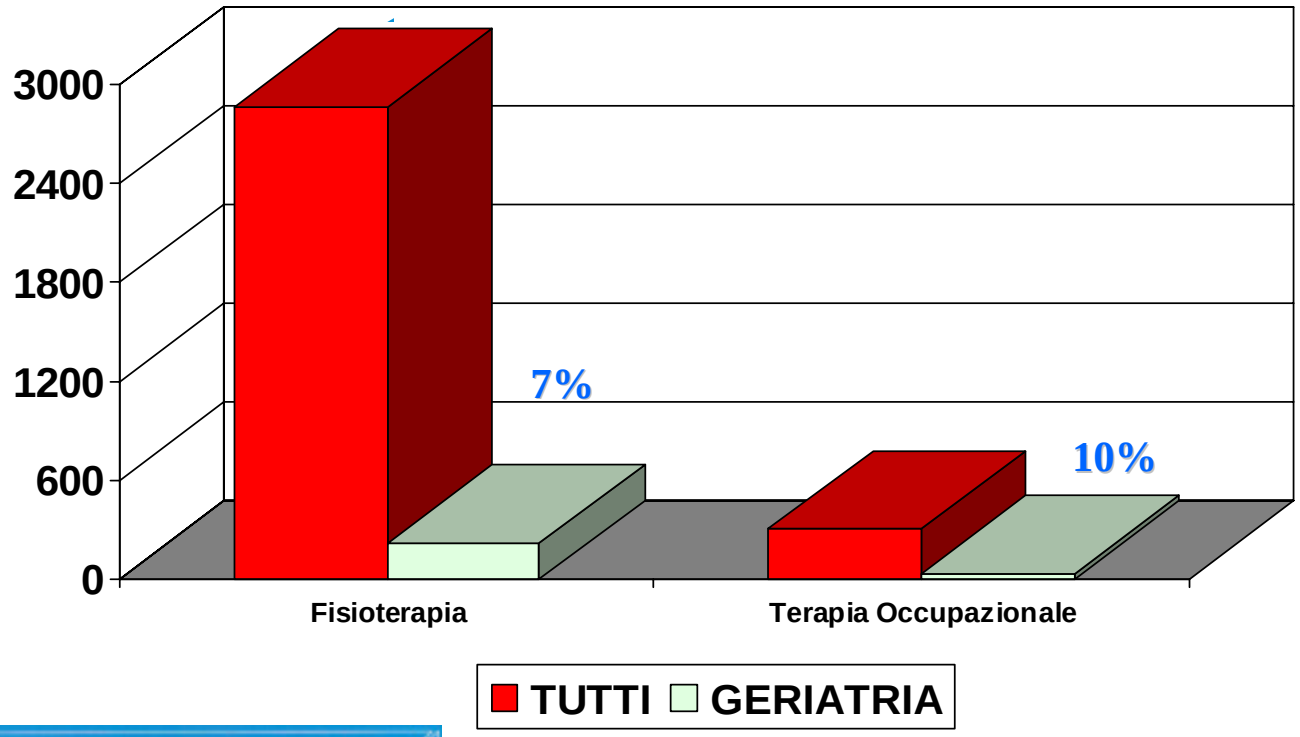
Disabilità e riabilitazione nell'anziano fragile

Francesco Landi

Centro di Medicina dell'Invecchiamento
Università Cattolica del Sacro Cuore, Roma

PMR
European Journal of
PHYSICAL MEDICINE
and REHABILITATION

riabilitazione geriatrica anni 1990-1996

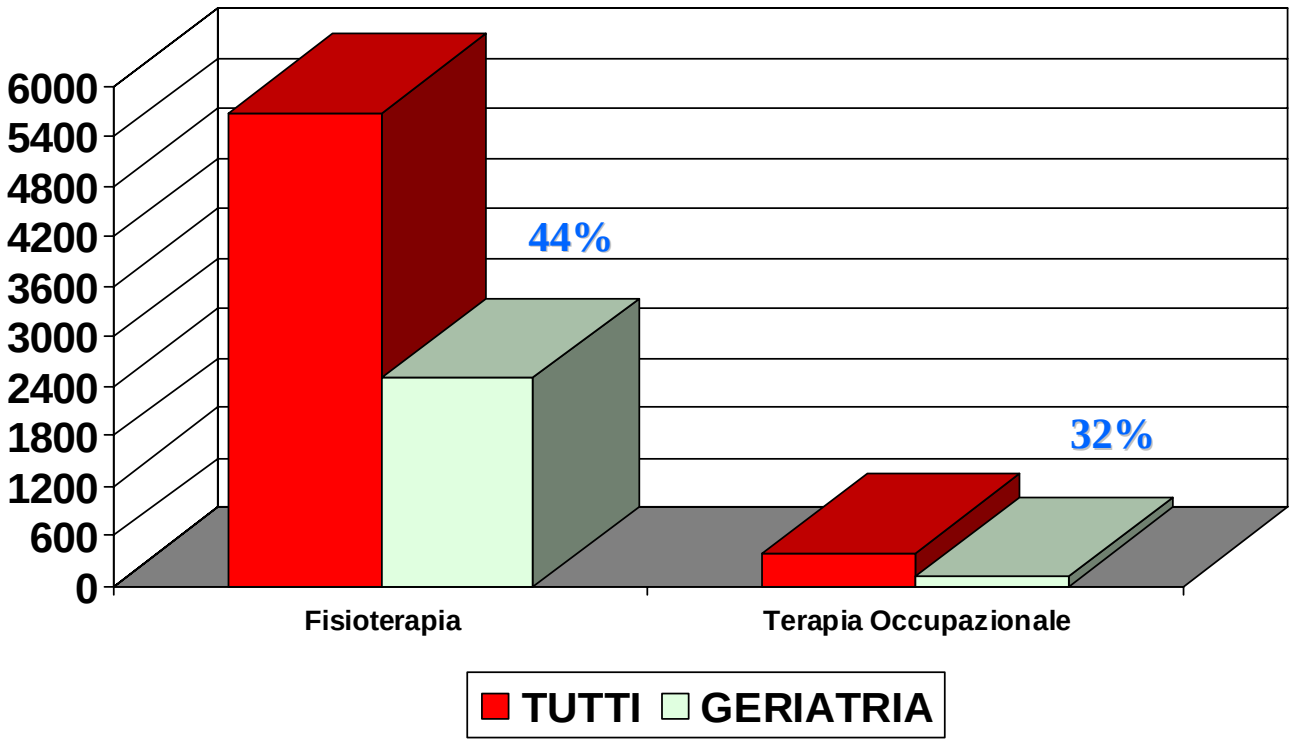


Official Organ of the Royal Belgian Society of Physical Medicine and Rehabilitation
Official Organ of the Österreichische Gesellschaft für Physikalische Medizin, Rehabilitation
Vol 6 No 1
February
1996
Blackwell Wissenschaft

Landi F, Eur J Phys Med Rehabil, 1996

Letteratura riabilitazione geriatrica anni 1997-2007

(Landi F, Personal data)



Disabilità Funzionale

Guralnik JM, Simonsick EM. Physical disability in older Americans. J Gerontol. 1993;48:3-10.

… functional disability has to be intended as the result of the interaction of different individual components of compromised functions: physical, emotional, and cognitive aspects usually interact to produce a comprehensive disability which is more than the simple addition of the single impairments, affecting the patient's global function and his self-dependency …

Stucki G, Ewert T, Cieza A. Value and application of the ICF in rehabilitation medicine. Disability and Rehabilitation. 2003;25(11-12):628-34.

... from a rehabilitation perspective, patients' functioning and health are associated with, but not merely a consequence of, a condition or disease ...

World Health Organization

Classification Assessment Surveys & Terminology Group

ICF

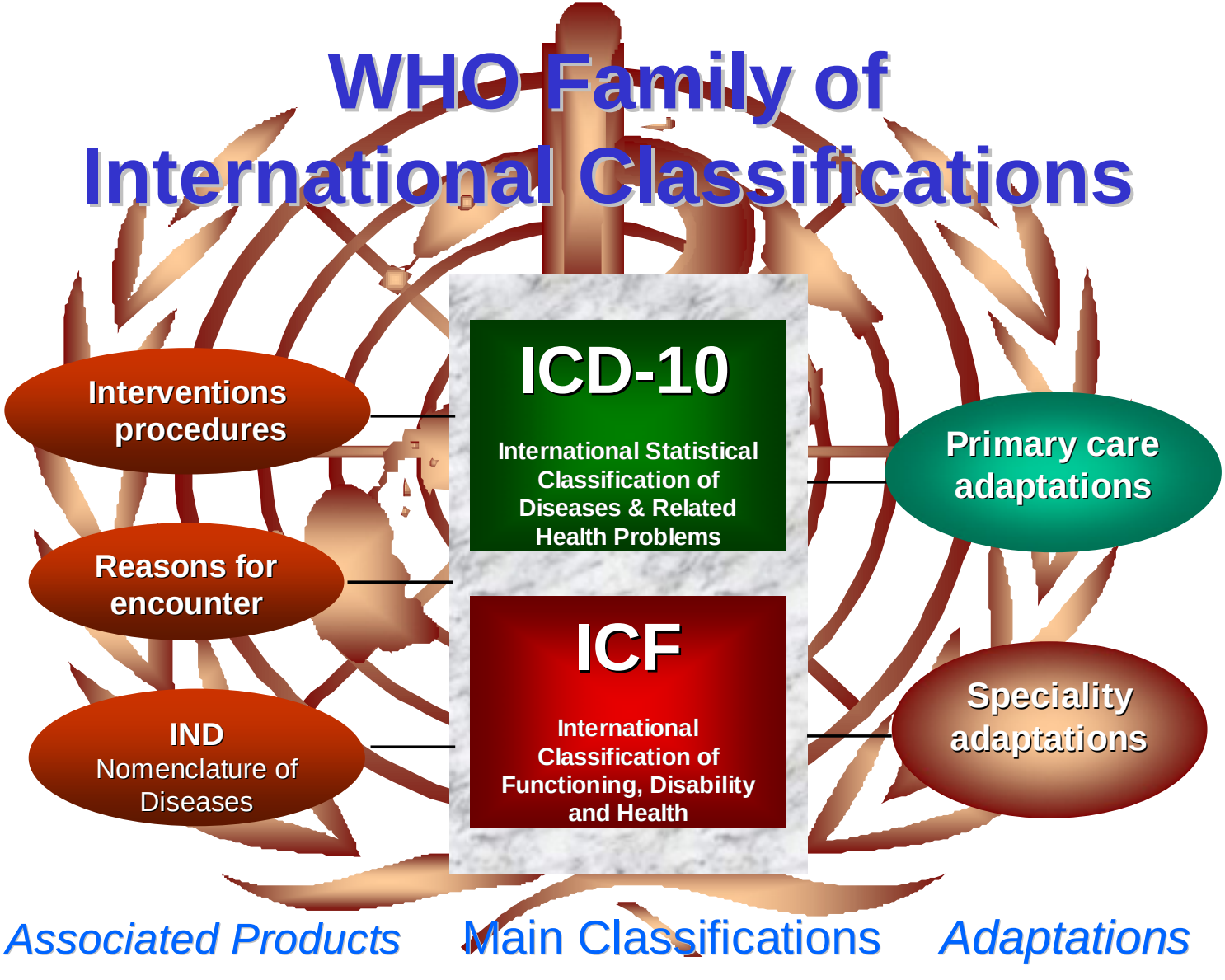
as the

New Member in the WHO Family of International Classifications

2001

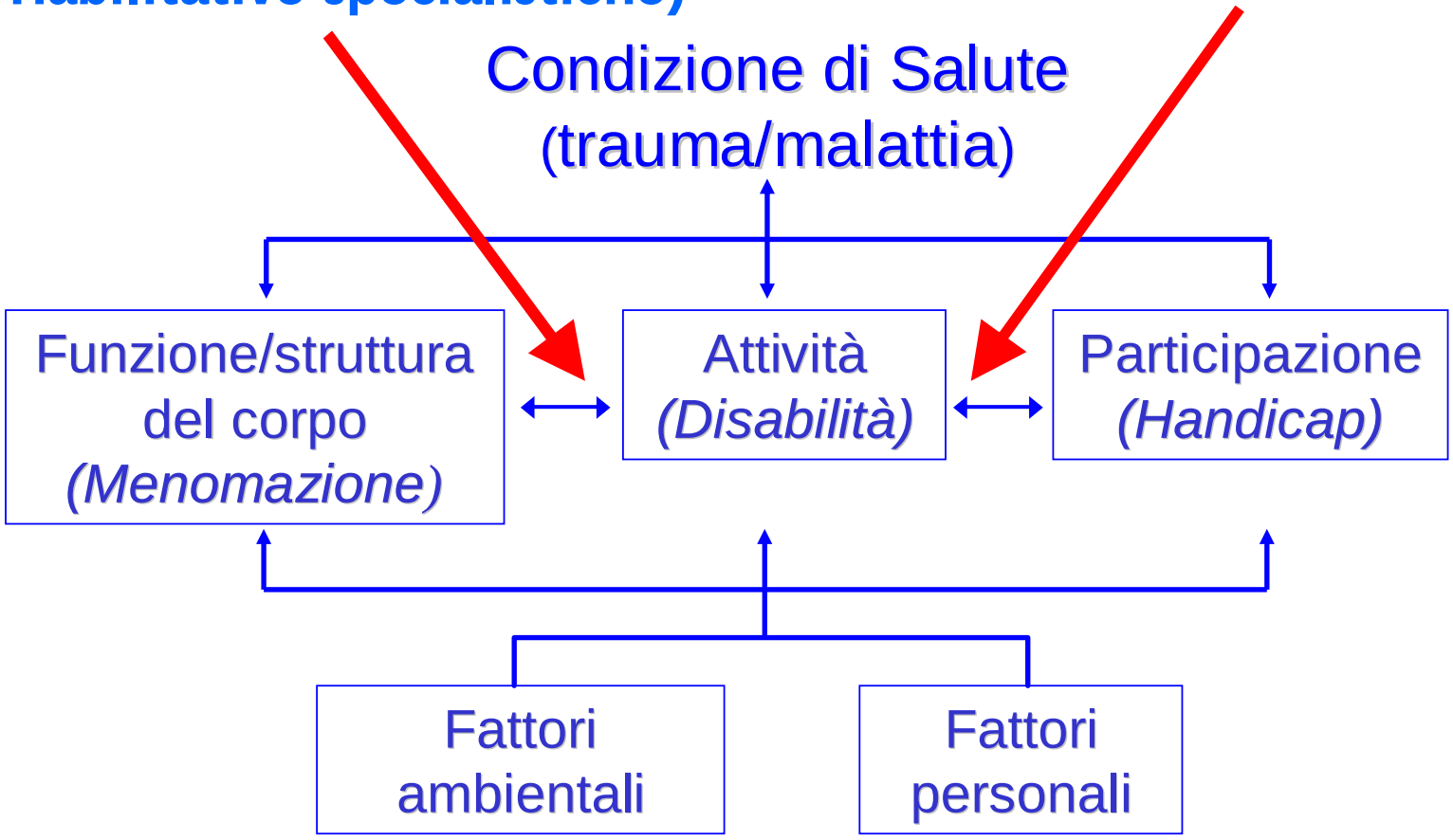
Paese vecchio, assistenza nuova: il caso Italia

WHO Family of International Classifications



RIABILITAZIONE
(Fisioterapia, Terapie riabilitative specialistiche)

TERAPIA OCCUPAZIONALE



L'intervento riabilitativo in ambito geriatrico deve essere organizzato sulla base di un modello concettuale di

I - Perché la riabilitazione in geriatria è differente ?

FRAGILITA'

- **Comorbidità**
- **Politerapia**
- **Stato funzionale**
  - Stato cognitivo
  - Funzione fisica
  - Tono dell'Umore
  - Stato sociale
- **Sd. geriatriche** (incontinenza/cadute)
- **Modificazioni metabolismo**
- **Modificazioni omeostasi**
- **Anemia/Osteoporosi/Sarcopenia**

II - Quando iniziare ?

riab. “classica” ↔ riab. “geriatrica”

diagnosi	diagnosi
↓	+
trattamento	trattamento
↓	+
riabilitazione	riabilitazione
⇓	⇓
in successione	*simultanea*

AMERICAN JOURNAL OF
Physical Medicine & Rehabilitation

PHYSIOTHERAPY AND OCCUPATIONAL THERAPY

A Geriatric Experience in the Acute Care Hospital[1]

Francesco Landi,[2] MD, Giuseppe Zuccalà, MD, Roberto Bernabei, MD, Alberto Cocchi, MD, Luca Manigrasso, MD, Alessia Tafani, PT, Giuliana De Angelis, PT and PierUgo Carbonin, MD

ABSTRACT Landi F, Zuccalà G, Bernabei R, Cocchi A, Manigrasso L, Tafani A, De Angelis G, Carbonin PU: Physiotherapy and occupational therapy. *Am J Phys Med Rehabil* 1997;76:38–42

The continuously growing segment of the geriatric population with the high incidence and prevalence of comorbidity and disability suggests that enhanced preventive and rehabilitative programs will be mandatory. The early arrangement of comprehensive assessment and rehabilitation services is extremely important not only in preventing the decline of patients in the acute care settings and successive prolonged care before discharge, but also in improving functional status at discharge. We have considered the effectiveness of a rehabilitation program in acute medical care of the elderly. This article discusses a pilot project being carried out at Catholic University Hospital "A. Gemelli" of Rome.

KEY WORDS: Elderly, Disability, Rehabilitation, Multidisciplinary Team

Landi F et al. *Am J Phys Med Rehabil*, 1997;76:38-42

Rehabilitation Program (PT + OT therapy)

Phase	Program	Goals
Step 1. Multidimensional assessment	Evaluation of sociodemographic, neuropsychological, functional and medical areas	Identifying the problematic areas, the risk of having a problem, the rehabilitation potential
Step 2. Patients in bed	Bed positioning, active and passive exercises, bed adaptive equipment, dressing the upper body, eating independently	Restoring or preserving normal function, preventing or correcting contractures, increasing range of motion, maintaining integrity of the skin, increasing circulation, providing proprioceptive and kinesthetic stimulation
Step 3. Patients on the ward	Transferring from bed, chair or wheelchair positioning, elementary group activities, ADLs training	Increasing body alignment, improving postural control, enhancing upper extremity, preventing contractures, increasing autonomy, alleviating burden care
Step 4. Therapy gymnasium	ADL and IADL training (eating, dressing, walking, grooming, using toilet, washing, cooking, using a telephone), providing adaptive equipment	Maintaining and increasing ability in performing activities of daily living and other functional activities, increasing perceptual/cognitive skills, promoting positive self-image through purposeful activities

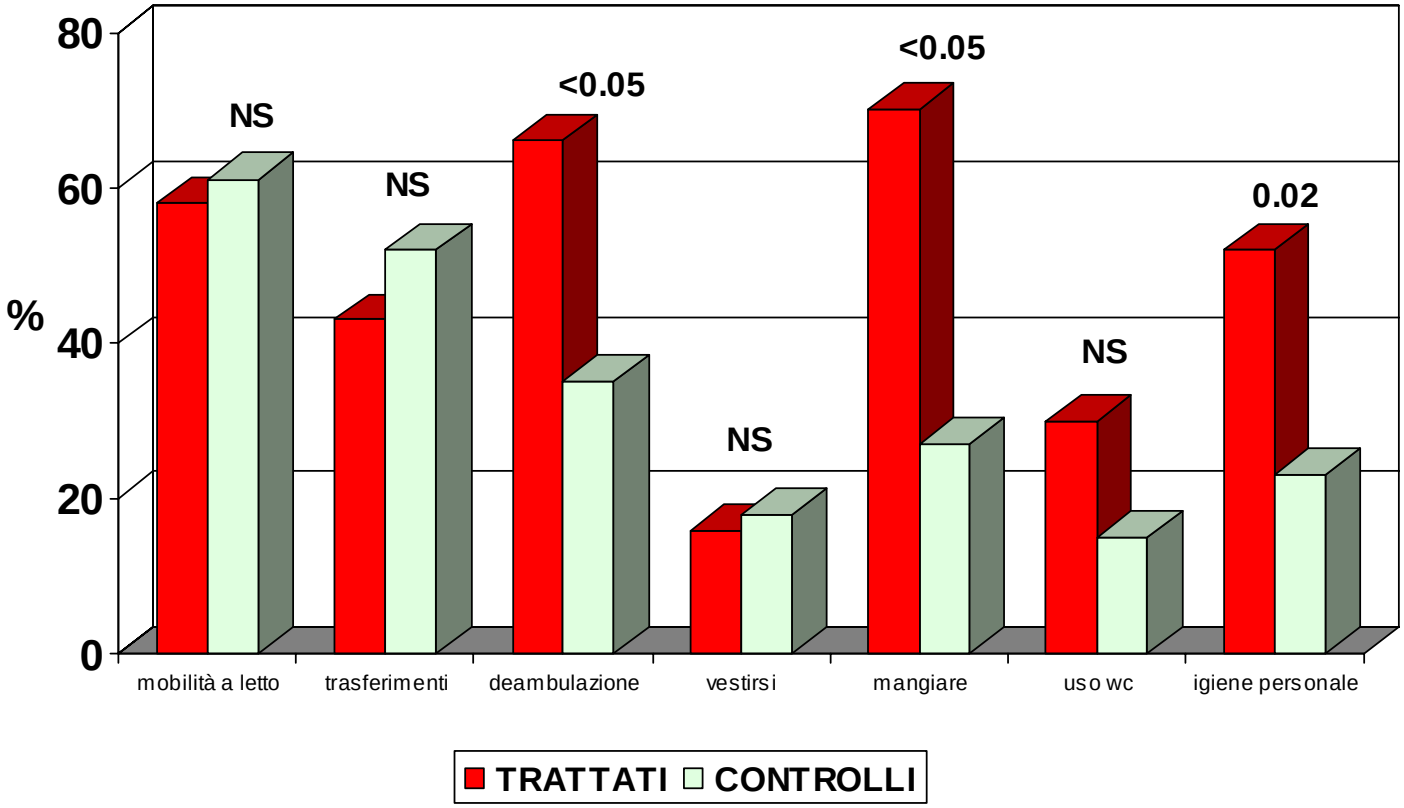
Landi F et al. Am J Phys Med Rehabil, 1997;76:38-

Descriptive analysis of baseline demographic and functional parameters according to intervention

	Intervento (n=67)	Controllo (n=36)	*p*
Età	81.7 ± 7.8	80.4 ± 8.3	n.s.
Sesso (F)	44 (65.6)	21 (58.3)	n.s.
MMSE	21.9 ± 6.1	20.9 ± 7.2	n.s.
GDS	14.4 ± 8.4	15.8 ± 7.2	n.s.
ADL			n.s.
indipendenti	2 (2.9)	1 (2.7)	
dipendenti 1-3	40 (59.7)	20 (55.7)	
dipendenti 4+	25 (37.4)	15 (41.6)	

Landi F et al. Am J Phys Med Rehabil, 1997;76:38-42

Effect of intervention on primary activity of daily living

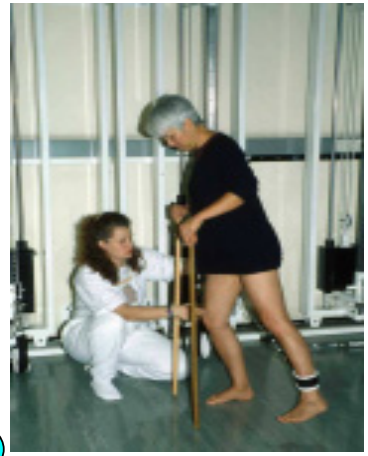


Landi F et al. Am J Phys Med Rehabil, 1997;76:38-42

III. Obiettivi differenti (?)

- *giovane*: restitutio ad integrum
- *anziano*: restitutio ADL - IADL

"piccolo guadagno"



Per questo tipo di malati il vero grande risultato è il "piccolo guadagno": averlo capito è stata una conquista almeno pari a quella del trapianto cardiaco.

Kane RL. Looking for physical therapy outcomes. Phys Ther 1994;74:425-9

European Journal of Neurology
The official journal of the European Federation of Neurological Societies

Functional decline in frail community-dwelling stroke patients

F. Landi[a], G. Onder[a,b], M. Cesari[a,b], V. Zamboni[a], A. Russo[a], C. Barillaro[a] and R. Bernabei[a]
on behalf of The Silvernet-HC study group
[a]*Department of Gerontology-Geriatric and Physiatric, Catholic University of Sacred Heart, Rome, Italy; and* [b]*Sticht Center on Aging, Wake Forest University-School of Medicine, Winston Salem, NC, USA*

Keywords:
frail elderly, functional decline, stroke

Received 2 August 2004
Accepted 15 December 2004

Patients who suffer a stroke event are at high risk of functional decline after the post-acute rehabilitation period. The aim of the present study was the evaluation of factors associated with functional decline in a large sample of older patients with stroke living in the community. The study population consisted of all patients admitted to home care programs after a post-acute rehabilitation program – with at least 1 year of follow-up – in twenty-two Italian Home Health Agencies from 2000 to 2002 (n = 1338). For the present study we selected 355 (26%) patients with diagnosis of stroke. After 1 year of in-home care program, 149 out of 355 stroke survivors (42%) had presented a worsening in the activities of daily living (ADL) scale score. In the final adjusted model, patients with cognitive impairment (OR 2.59, 95% CI, 1.45–4.64), pressure ulcer (OR 2.74, 95% CI, 1.45–5.18), urinary incontinence (OR 1.64, 95% CI, 1.01–3.29), or hearing impairment (OR 1.83, 95% CI, 1.02–3.29) were more likely to significantly decline in physical functioning after a period of 1 year in-home care program. Our study documents that functional decline of stroke patients was largely dependent on specific subjects' clinical characteristics. Three of four concomitant disabling conditions associated in our sample with functional decline – pressure ulcer, urinary incontinence, hearing – can be prevented and eventually treated or modified. Appropriate post-acute rehabilitation programs and adequate home care interventions focused on the prevention and treatment of these conditions might be correlated to better outcomes in older post-stroke patients.

European Journal of Neurology

2006, 13: 17-23

Paese vecchio, assistenza nuova: il caso Italia

Predictors of functional decline

Variabe	Worsened (n = 149)	Unchanged/ Improved (n = 206)	Univariate odds ratio (95% CI)	Adjusted model[a] odds ratio (95% CI)	ADL adjusted[b] odds ratio (95% CI)
Age (years)					
65–74	11	21	1.0 (Referent)	1.0 (Referent)	1.0 (Referent)
75–84	28	71	0.92 (0.37–2.25)	0.62 (0.23–1.69)	0.69 (0.24–1.94)
≥85	110	114	2.25 (0.98–5.13)	1.19 (0.47–2.98)	1.23 (0.47–3.23)
Gender					
Male	64	97		1.0 (Referent)	1.0 (Referent)
Female	85	109	1.18 (0.77–1.80)	1.05 (0.63–1.73)	1.21 (0.76–1.94)
Living alone					
No	128	179	1.0 (Referent)	1.0 (Referent)	1.0 (Referent)
Yes	21	27	1.08 (0.58–2.00)	1.14 (0.56–2.31)	1.16 (0.57–2.34)
CPS score					
0–1	23	91	1.0 (Referent)	1.0 (Referent)	1.0 (Referent)
≥2	126	115	4.32 (2.57–7.31)	2.59 (1.45–4.64)	2.38 (1.32–4.23)
No. of diseases					
0–2	56	71	1.0 (Referent)	1.0 (Referent)	1.0 (Referent)
≥3	93	135	0.87 (0.56–1.35)	0.85 (0.51–1.43)	0.85 (0.52–1.39)
Depression					
No	43	70	1.0 (Referent)	1.0 (Referent)	1.0 (Referent)
Yes	106	136	1.26 (0.80–2.00)	1.23 (0.72–2.10)	1.13 (0.68–1.88)
Delirium					
No	101	172	1.0 (Referent)	1.0 (Referent)	1.0 (Referent)
Yes	48	34	2.40 (1.45–3.97)	1.72 (0.96–3.05)	1.94 (1.11–3.39)
Pressure ulcer					
No	106	186	1.0 (Referent)	1.0 (Referent)	1.0 (Referent)
Yes	43	20	3.37 (2.10–6.74)	2.73 (1.45–5.10)	1.99 (1.08–3.66)
Urinary incontinence					
No	66	129	1.0 (Referent)	1.0 (Referent)	1.0 (Referent)
Yes	83	77	2.10 (1.73–3.23)	1.64 (1.01–2.70)	1.34 (0.83–2.16)
Hearing impairment					
No	96	168	1.0 (Referent)	1.0 (Referent)	1.0 (Referent)
Yes	53	38	2.04 (1.30–3.99)	1.83 (1.02–3.29)	1.96 (1.15–3.36)
Vision impairment					
No	80	133	1.0 (Referent)	1.0 (Referent)	1.0 (Referent)
Yes	69	73	1.57 (1.02–2.41)	1.01 (0.59–1.73)	1.24 (0.77–2.00)
Daily pain					
No	91	114	1.0 (Referent)	1.0 (Referent)	1.0 (Referent)
Yes	58	92	0.78 (0.51–1.21)	1.07 (0.65–1.76)	0.94 (0.58–1.51)
Swallowing problem					
No	95	148	1.0 (Referent)	1.0 (Referent)	1.0 (Referent)
Yes	54	58	1.45 (0.92–2.27)	1.37 (0.80–2.34)	1.12 (0.68–1.83)

Impedire la comparsa di una ulcera da pressione è un problema di tutti i giorni del geriatra; ma è anche un esempio utile per capire il vero significato del "piccolo guadagno" in funzione della qualità della vita.

Landi et al. Eur J Neurol 2006; 13:17-23

UCSC ROMA

Centro Medicina dell'Invecchiamento

Servizio di Terapia Occupazionale della Mano

CASE REPORT "piccolo guadagno"

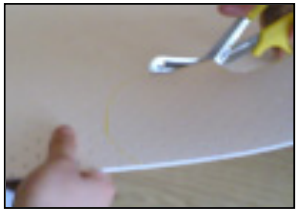
Trattamento di Terapia occupazionale della mano in una paziente anziana emipl

Sig.ra Domenica
86 anni
Sposata
1 figlia e 2 nipoti
Professione – sarta

Ictus sn (dicembre 2005)
Iniziale coinvolgimento della funzione linguistica
Buon recupero nei 6 mesi successivi alla lesione
Distonia e sintomatologia algica mano dx

Passioni: il cucito, la scrittura

Difficoltà nel pettinarsi, nell'usare le posate
Difficoltà nel tenere la penna e nell'adoperare un ago



CASE REPORT "piccolo guadagno"

Trattamento di Terapia occupazionale della mano in una paziente anziana emiplegica

Valutazione

- Intervista
- Adl
- Iadl
- Vas
- Dash

FOLLOW UP A TRE MESI

Trattamento

- Splinting
- Training ADL, IADL

MANGIARE …

REST IN POSITION …

PETTINARSI …

SCRIVERE …

CUCIRE ...

IV. Valutazione risultati

- outcomes
- fattori prognostici
- comparazioni

Stroke

Editorial Comment

Occupational Therapy for Stroke Patients: When, Where, and How?

Francesco Landi, MD, PhD, *Guest Editor*
Roberto Bernabei, MD, *Guest Editor*
Department of Gerontology-Geriatric and Physiatric
Catholic University of the Sacred Heart
Rome, Italy

... the heterogeneity of functional and health problems experienced by elderly patients makes it difficult to evaluate multiple outcomes of rehabilitation. Valid negative predictors of functional recovery after acute events include age, urinary incontinence, cognitive impairment, delirium, functional deficits present at admission, and level of social support. Other factors, however, make it difficult to draw definitive conclusions about the efficacy and cost-effectiveness of rehabilitative programs. These include the characteristics of the studied population and of the rehabilitation setting, the types of assessments and/or interventions, and the use of varying outcome measures ...

... given the potential conflict between the increasing demand for rehabilitative programs and the development of health care services that limit the availability of rehabilitation beds, identification of elderly patients who could potentially gain improved function from such services is imperative ...

Stroke. 2003;34:676-687

Predictors of Rehabilitation Outcomes in Frail Patients Treated in a Geriatric Hospital

Francesco Landi, MD, PhD, Roberto Bernabei, MD, Andrea Russo, MD, Giuseppe Zuccalà, MD, Graziano Onder, MD, Luciana Carosella, MD, Matteo Cesari, MD, and Alberto Cocchi, MD

OBJECTIVES: To evaluate the effect of medical indicators of health status on functional gain during rehabilitation of frail older patients.

DESIGN: Observational study.

SETTING: A hospital geriatric rehabilitation department (Catholic University of Rome).

PARTICIPANTS: Two hundred forty-four older patients admitted consecutively for rehabilitation after acute illnesses between March 1999 and June 2000.

Journal of the AMERICAN GERIATRICS SOCIETY

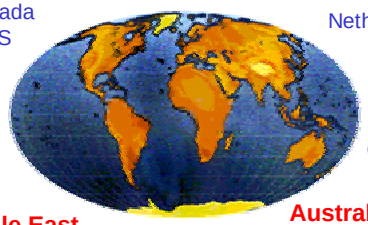
2002;50:679-684

inter*RAI* – *MDS-PAC*

Nordic Countries
Iceland, Norway, Sweden, Denmark, Finland

North America
Canada
US

Europe
Netherlands, Germany, Switzerland, France, UK
Italy, Spain, Czech Republic



Middle East
Israel

Australasia
Japan, South Korea, Taiwan, Hong Kong
Australia, New Zealand

MEASUREMENTS: Patients were evaluated with the Minimum Data Set for Post-Acute Care (MDS-PAC) assessment form soon after the admission and every 2 weeks thereafter. Two summary scales based on MDS-PAC items are designed to describe the performance in personal activities of daily living (ADLs) and the level of cognitive function (Cognitive Performance Scale). To identify predictors of functional recovery, we constructed a multiple logistic regression model having as a dependent variable the improvement of one or more points in the ADL scale.

Descriptive analysis of baseline socio-demographic, functional and clinical parameters according to age

Characteristic	Total (n = 244)	65–74 (n = 110)	75–84 (n = 75)	≥85 (n = 59)
Female, n (%)	155 (63)	64 (58)	50 (66)	41 (41)
Marital status, n (%)				
Married	118 (48)	86 (78)	25 (33)	7 (12)
Widowed	103 (42)	14 (12)	41 (54)	48 (81)
Never married	23 (10)	10 (10)	9 (13)	4 (7)
Living alone, n (%)	96 (39)	22 (20)	33 (44)	41 (69)
Sensory impairment, n (%)				
Hearing	70 (29)	14 (13)	20 (27)	36 (61)
Vision	35 (14)	9 (8)	5 (7)	21 (35)
Delirium, n (%)*	15 (6)	7 (6)	3 (4)	5 (8)
Urinary incontinence, n (%)	138 (56)	47 (43)	44 (58)	47 (79)
Pressure ulcer, n (%)	40 (16)	12 (11)	9 (12)	19 (32)
ADL score, mean ± SD	4.5 ± 2.3	4.2 ± 2.5	4.5 ± 2.3	5.1 ± 1.0
CPS score, mean ± SD	1.1 ± 1.2	0.9 ± 1.1	0.9 ± 1.1	1.7 ± 1.8
Number of diseases, mean ± SD	3.7 ± 1.7	3.4 ± 1.8	4.2 ± 1.4	3.6 ± 1.8
Body mass index, kg/m^2, mean ± SD	23.9 ± 4.5	24.2 ± 3.4	24.9 ± 4.1	21.9 ± 6.4
Daily pain, n (%)†	91 (37)	48 (44)	21 (28)	22 (37)

Landi et al. JAGS 2002;50:679-684

Predictors of functional recovery

Variable	Improved (n = 138)	Unchanged/Worsened (n = 106)	Univariate Odds Ratio (95% CI)	Adjusted Model* Odds Ratio (95% CI)
Age				
65–74	71	39	1.0 (Referent)	1.0 (Referent)
75–84	43	32	0.73 (0.40–1.34)	0.68 (0.29–1.61)
≥ 85	24	35	0.37 (0.19–0.72)	1.07 (0.35–3.30)
Gender				
Male	48	41	(Referent)	(Referent)
Female	88	67	1.09 (0.64–1.84)	1.50 (0.73–3.07)
Primary caregiver				
Available	88	60	(Referent)	(Referent)
Not available	50	46	0.77 (0.44–1.24)	0.86 (0.39–1.88)
Cognitive Performance Scale†				
0–1	117	69	1.0 (Referent)	1.0 (Referent)
≥2	21	37	0.33 (0.18–0.61)	0.36 (0.14–0.92)
Number of diseases				
0–2	35	20	(Referent)	(Referent)
≥ 3	103	86	0.68 (0.36–1.27)	0.56(0.21–1.47)
Body mass index				
<22 kg/m²	22	18	1.0 (Referent)	1.0 (Referent)
≥22 kg/m²	88	52	1.38 (0.68–2.81)	1.96 (0.85–4.49)
Delirium				
No	131	97	(Referent)	(Referent)
Yes	6	9	0.49 (0.17–1.43)	0.59 (0.17–2.00)
Pressure ulcer				
No	119	84	1.0 (Referent)	1.0 (Referent)
Yes	18	22	0.57 (0.29–1.14)	0.44 (0.18–1.10)
Urinary incontinence				
No	66	39	(Referent)	(Referent)
Yes	71	67	0.62 (0.37–1.05)	1.07 (0.49–2.34)
Hearing impairment				
No	107	67	(Referent)	(Referent)
Yes	31	39	0.49 (0.28–0.87)	0.75 (0.32–1.78)
Vision impairment				
No	126	83	(Referent)	(Referent)
Yes	12	23	0.34 (0.16–0.72)	0.94 (0.31–2.79)
Daily pain				
No	87	65	(Referent)	(Referent)
Yes	50	41	0.91 (0.53–1.53)	0.82 (0.40–1.67)

Landi et al. JAGS 2002;50:679-684

Predictors of Rehabilitation Outcomes: A Comparison of Israeli and Italian Geriatric Post-Acute Care (PAC) Facilities Using the Minimum Data Set (MDS)

Jacob Gindin, MD, Adrian Walter-Ginzburg, Moshe Geitzen, MD, Shulamit Epstein, PhD, Shmuel Levi, MD, Francisco Landi, MD, PhD, and Roberto Bernabei, MD

Objectives: To understand the relative contribution of sociodemographic, clinical, and health care features to rehabilitation outcomes in Israel and in Italy in post-acute care (PAC) facilities.

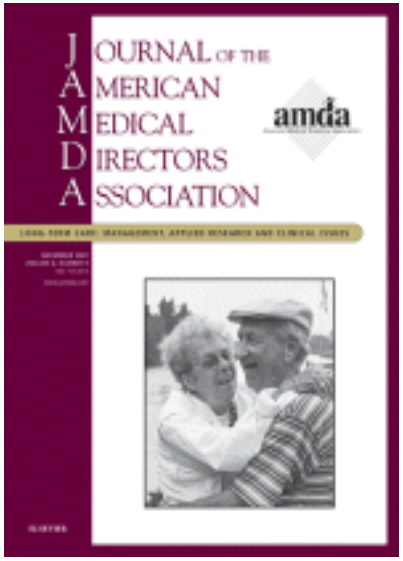
Design: Prospective cross-national study

Setting: Two hospital geriatric PAC departments: Harzfeld Geriatric Hospital, Gedera, Israel, and Catholic University of Sacred Heart Geriatric Hospital, Rome, Italy.

Participants: Post-acute care patients aged 65 and older admitted consecutively for stabilization, improvement, or rehabilitation to 3 departments in Harzfeld Geriatric Hospital, Gedera, Israel from April, 1999 through February, 2002 (N = 364), and to the post-acute Geriatric Rehabilitation Unit of the "A. Gemelli" Hospital, Catholic University of Sacred Heart, Rome, Italy, between February, 1999, and April, 2002 (N = 351), for whom there were complete assessments at admission and discharge (the total number admitted in Israel was 505, and in Italy, 409).

Measurements: Minimum Data Set for Post-Acute Care (MDS-PAC) assessments conducted within 4 days of admission and at discharge; data collected identically in both sites. Predictors of functional recovery> were identified using multivariate binary logistic regression. The dependent variable: improvement of 1 or more points in the ADL scale.

Results: The staffing pattern of the PAC department in Italy had about double the physicians and physio- and occupational therapists than in Israel, but about the same number of nurses and somewhat fewer aides than in Israel. Multivariate binary logistic regression that includes country, age, sex, and marital status, found that the patients in Italy had about triple the probability of improvement in ADL function (OR 3.3, CI 2.4-4.6) ($P < .001$) than PAC patients in Israel. Even after health system characteristics were added to the model, ADL improvement was most significantly associated with higher cognitive ability and a diagnosis of hip fracture, as well as longer length of stay and being admitted to PAC directly from an acute hospital. For each additional point (worse cognition) in a cognitive scale, there was a 30% decrease in the probability of ADL improvement (OR 0.7, CI 0.6-0.8, $P < .001$). Those who had a stroke were about half as likely to show ADL improvement (OR 0.5, CI 0.3-0.7) than those without stroke, but those with a hip fracture had more than double the probability of ADL improvement (OR 2.7, CI 1.7-4.2) than those without hip fracture. Those who stayed in the PAC ward an additional block of time had a 30% higher probability of ADL improvement ($P < .1$), and those who were admitted directly to PAC from an acute hospital had more than 4 times



J Am Med Dir Assoc 2007;8:233-242

Paese vecchio, assistenza nuova: il caso Italia

Structure of health staff of participating PAC Departments, in terms of average number of staff and beds (Staff Burden) in Israel and Italy

	Israel		Italy	
	Mean no. of Staff	Staff Burden, per Bed*	Staff, no.	Staff Burden, per Bed*
Physicians	4.8	0.11	5.5	0.24
Nurses	19	0.45	11	0.48
Aides	6.25	0.15	2.5	0.11
Physiotherapy/ occupational therapy	2.75	0.07	2.5	0.11
Occupational instructor	0.5	0.001	0	0
Speech therapy	0.5	0.01	1	0.04

* Staff burden was derived by dividing number of beds by number of staff members in each category.

J Am Med Dir Assoc 2007;8:233-242

Multiple Logistic Regression of Predictors of Functional Recovery (1 Point in ADL) in Israel and Italy (Israel, n=364; Italy, n=351)

	Model 1 (Demographic) OR (CI)	Model 2 (All of Model 1 Plus Clinical Characteristics) OR (CI)	Model 3 (All of Model 2, Plus Duration of Stay and Admitted From) OR (CI)
Country (Italy vs Israel)	3.3 (2.4-4.5)§	2.2 (1.6-3.3)§	2.8 (1.8-4.4)§
Demographic characteristics			
Age (continuous)	0.97 (0.95-0.99)‡	.98 (.95-1.0) ns	0.97 (0.95-1.00)†
Sex (female vs male)	2.0 (1.3-2.9)§	1.5 (0.96-2.3) ns	1.5 (0.96-2.4)*
Marital status (widowed vs married)	0.7 (.5-1.0)*	0.8 (0.5-1.2) ns	0.7 (0.5-1.1) ns
Never married vs married	1.1 (0.6-2.2) ns	1.3 (0.6-2.7) ns	1.1 (0.5–2.5) ns
Marital status (missing data vs married)	0.4 (0.2-0.8)†	0.5 (0.2-1.1) ns	0.6 (0.2-1.5) ns
Clinical characteristics			
CPS (continuous)		0.7 (0.6-0.8)§	0.7 (0.6-0.77)§
Number of diagnoses		1.2 (1.03-1.4)‡	1.2 (1.01-1.4)†
Stroke		0.5 (0.3-0.7)§	0.5 (0.3-0.75)§
Hip fracture		2.7 (1.7-4.2)§	2.6 (1.6-4.1)§
COPD		1.05 (0.6-1.8) ns	1.1 (0.6-1.9) ns
Heart disease		0.8 (0.5-1.15) ns	0.7 (0.5-1.07)*
Hypertension		1.2 (.8-1.8) ns	1.2 (0.8-1.9) ns
Diabetes		0.8 (0.5-1.3) ns	0.8 (0.5-1.3) ns
Health care utilization characteristics			
Duration of stay (continuous categories)			1.3 (0.99-1.6)*
Admitted from hospital vs private home			4.1 (2.3-7.0)§
Admitted from other vs private home			1.3 (0.5-3.1) ns

J Am Med Dir Assoc 2007;8:233-242

V. Strategie di intervento

- fisioterapia
- terapia occupazionale

Occupational therapy for patients with problems in activities of daily living after stroke

Background

Occupational therapy aims to help people reach their maximum level of function and independence in all aspects of daily life.

Objectives

To determine whether occupational therapy focused specifically on personal activities of daily living improves recovery for patients following stroke.

Main results

We identified 64 potentially eligible trials and included nine studies (1258 participants). Occupational therapy interventions reduced the odds of a poor outcome (Peto odds ratio 0.67 (95% confidence interval (CI) 0.51 to 0.87; P = 0.003). and increased personal activity of daily living scores (standardised mean difference 0.18 (95% CI 0.04 to 0.32; P = 0.01). For every 11 (95% CI 7 to 30) patients receiving an occupational therapy intervention to facilitate personal activities of daily living, one patient was spared a poor outcome.

Authors' conclusions

Patients who receive occupational therapy interventions are less likely to deteriorate and are more likely to be independent in their ability to perform personal activities of daily living. However, the exact nature of the occupational therapy intervention to achieve maximum benefit needs to be defined.

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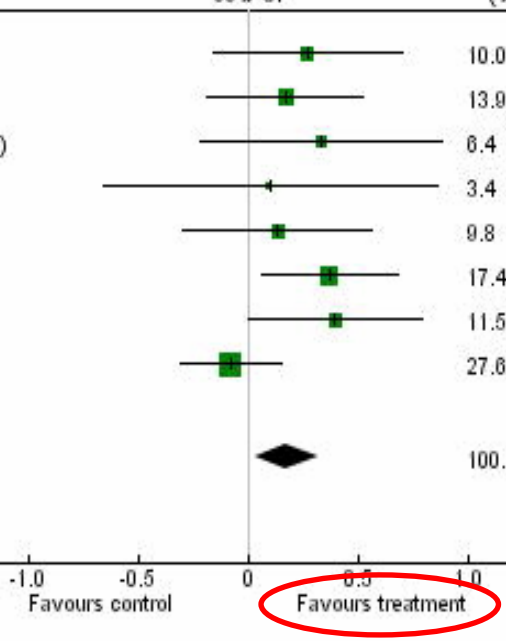
Evidence for healthcare decision-making

Occupational therapy versus no routine input Outcome: ADL

Study	Treatment N	Treatment Mean(SD)	Control N	Control Mean(SD)	Standardised Mean Difference (Random) 95% CI	Weight (%)	Standardised Mean D 95% CI
Cardiff 1995	46	12.30 (4.74)	39	10.87 (5.72)		10.0	0.27 [-0.16, 0.70]
Glasgow 2000	60	16.17 (3.76)	62	15.45 (4.48)		13.9	0.17 [-0.18, 0.53]
Hong Kong 2004	30	108.90 (11.60)	23	104.90 (12.00)		6.4	0.33 [-0.21, 0.88]
Nottingham 1996	12	10.75 (3.86)	15	10.33 (4.19)		3.4	0.10 [-0.66, 0.86]
Nottingham 1997	45	15.42 (4.64)	38	14.82 (3.97)		9.8	0.14 [-0.30, 0.57]
Nottingham 1999	84	18.44 (2.72)	79	17.35 (3.05)		17.4	0.38 [0.07, 0.69]
Nottingham 2001	53	10.21 (5.90)	47	8.09 (4.45)		11.5	0.40 [0.00, 0.80]
TOTAL 2001	218	15.77 (4.04)	110	16.08 (3.87)		27.6	-0.08 [-0.31, 0.15]
Total (95% CI)	548		413			100.0	0.18 [0.04, 0.32]

Test for heterogeneity chi-square=8.08 df=7 p=0.33 I^2 =13.3%
Test for overall effect z=2.45 p=0.01



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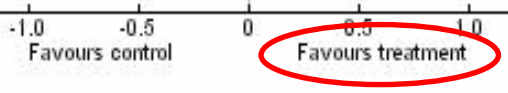
Occupational therapy versus no routine input Outcome: IADL

Study	Treatment N	Treatment Mean(SD)	Control N	Control Mean(SD)	Standardised Mean Difference (Random) 95% CI	Weight (%)	Standardised Mean I 95% CI
Cardiff 1995	45	5.73 (5.10)	39	5.10 (6.00)		12.9	0.11 [-0.32, 0.54]
Glasgow 2000	60	28.33 (15.72)	62	26.58 (16.47)		16.9	0.11 [-0.25, 0.46]
Nottingham 1995	41	31.26 (15.93)	23	25.43 (17.20)		9.7	0.35 [-0.16, 0.87]
Nottingham 1997	45	8.36 (5.89)	38	6.63 (4.83)		12.6	0.32 [-0.12, 0.75]
Nottingham 1999	84	42.95 (15.05)	79	34.67 (17.73)		19.9	0.50 [0.19, 0.81]
TOTAL 2001	219	33.38 (18.45)	112	33.30 (19.50)		28.0	0.00 [-0.22, 0.23]
Total (95% CI)	494		353			100.0	0.21 [0.03, 0.39]

Test for heterogeneity chi-square=7.43 df=5 p=0.19 I^2 =32.7%
Test for overall effect z=2.30 p=0.02



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Effects of an Occupational Therapy Program on Functional Outcomes in Older Stroke Patients

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Paese vecchio, assistenza nuova: il caso Italia

Clinical and functional characteristics of subjects in the intervention and control groups

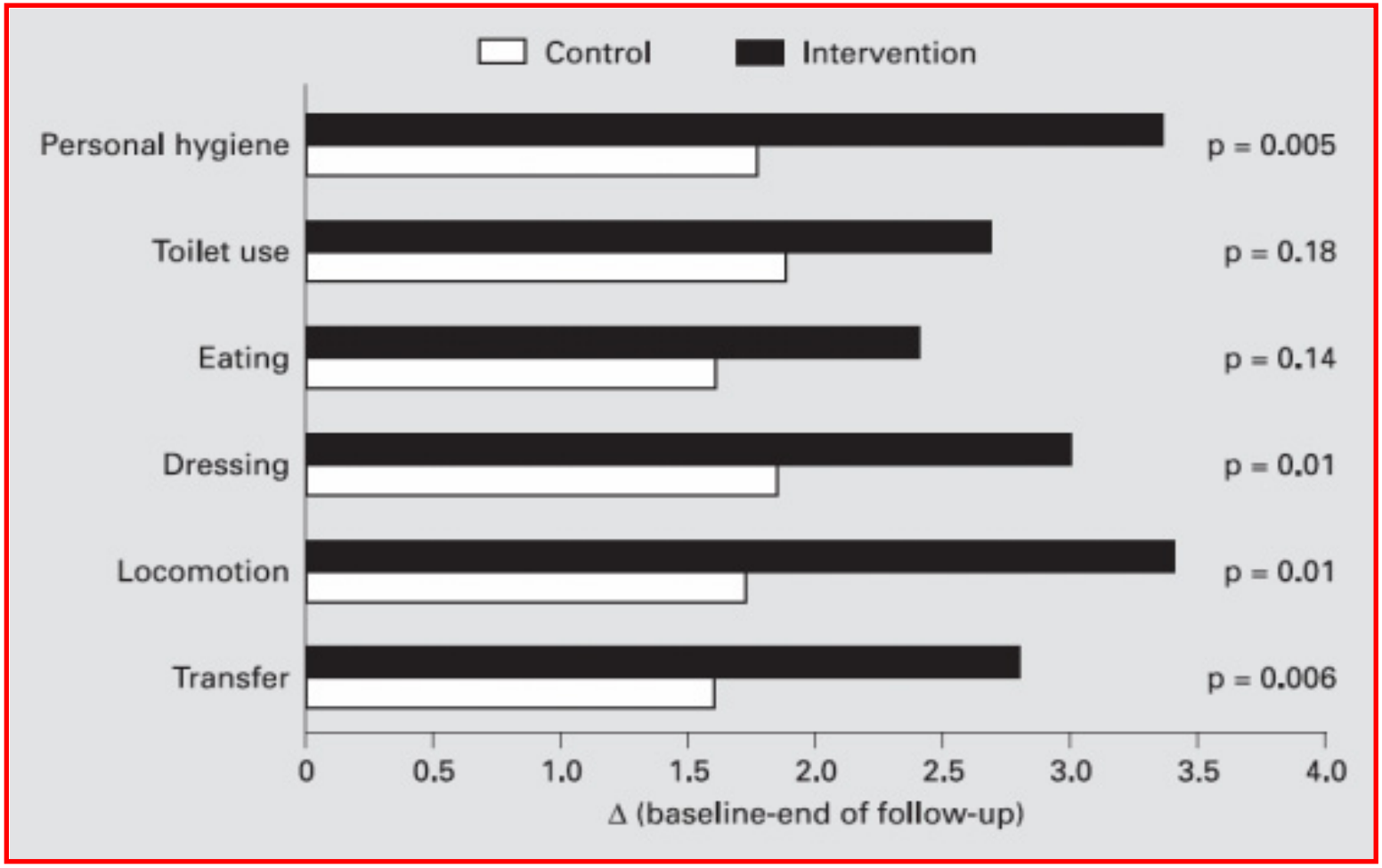
Characteristics	Intervention (n = 25)	Control (n = 25)	p
Age, years	78.3 ± 9.4	74.9 ± 10.9	0.2
Women (%)	13 (52)	14 (56)	0.5
Marital status (%)			
Never married	3 (12)	4 (16)	0.8
Married	15 (60)	15 (60)	
Widowed	7 (28)	6 (24)	
Activity Daily Living score (0–42)[a]	30.7 ± 6.1	30.8 ± 7.8	0.9
Cognitive Performance Scale score (0–6)[a]	2.1 ± 2.0	1.8 ± 2.1	0.7
Depression (0–9)[a]	3.0 ± 2.4	4.2 ± 3.1	0.1
Number of medical conditions	5.0 ± 1.3	4.8 ± 1.7	0.5
Number of medications	3.8 ± 0.9	4.1 ± 2.0	0.6
Urinary incontinence (%)	21 (84)	20 (80)	0.5
Pressure ulcer (%)	7 (28)	7 (28)	0.6
Balance (%)[b]			
Able to stabilize without assistance	3 (12)	5 (20)	0.3
Unable to stabilize without assistance	22 (88)	20 (80)	
Motor deficit in arm (%)[c]			
Normal or diminished power	17 (68)	16 (64)	0.5
No movement	8 (32)	9 (36)	
Tactile sensation (%)[d]			
Normal or diminished	19 (76)	20 (80)	0.5
Absent	6 (24)	5 (20)	
Aphasia (%)	7 (28)	5 (20)	0.3

Effect of occupational therapy on primary activity of daily living

Variable	Participants		Odds ratios	
	improved % (n)	unchanged/ worsened, % (n)	unadjusted OR (95% CI)	adjusted[a] OR (95% CI)
Transfers				
Control	84 (21/25)	16 (4/25)	1.0 (referent)	1.0 (referent)
Intervention	92 (23/25)	8 (2/25)	1.75 (1.14–2.70)	1.92 (1.19–3.08)
Locomotion				
Control	80 (20/25)	20 (5/25)	1.0 (referent)	1.0 (referent)
Intervention	88 (22/25)	12 (3/25)	1.45 (1.07–1.97)	1.49 (1.08–2.07)
Dressing				
Control	80 (20/25)	20 (5/25)	1.0 (referent)	1.0 (referent)
Intervention	100 (25/25)	0 (0/25)	1.69 (1.09–2.63)	1.75 (1.10–2.76)
Eating				
Control	60 (15/25)	40 (10/25)	1.0 (referent)	1.0 (referent)
Intervention	80 (20/25)	20 (5/25)	1.26 (0.93–1.71)	1.42 (0.99–2.05)
Toilet use				
Control	72 (18/25)	28 (7/25)	1.0 (referent)	1.0 (referent)
Intervention	84 (21/25)	16 (4/25)	1.21 (0.91–1.60)	1.23 (0.92–1.64)
Personal hygiene				
Control	72 (18/25)	28 (7/25)	1.0 (referent)	1.0 (referent)
Intervention	92 (23/25)	8 (2/25)	1.58 (1.11–2.24)	1.68 (1.17–2.42)

[a] Adjusted for age and sex.

Mean differences in ADL items score between the baseline and the end of follow-up assessment



PMR European Journal of PHYSICAL MEDICINE and REHABILITATION

Editorial

From the Cattedra Geriatria, Instituto di Medicina Interna e Geriatria, Universitá Cattolica del Sacro Cuore, Rome, Italy

Geriatric Rehabilitation

F. Landi, P. U. Carbonin, and R. Bernabei

The need for preventive and rehabilitative programs is steadily increasing with the growing proportion of the elderly in the population and the associated high rate of comorbidity and disability. Modern thought holds that the philosophy of rehabilitation should be the heart and primary aim of geriatrics.

Editorial Comment

Francesco Landi, MD, PhD, *Guest Editor*
Roberto Bernabei, MD, *Guest Editor*
Department of Gerontology-Geriatric and Physiatric

… the emerging lack of resources for health care services in industrialized nations and the increasingly limited availability of rehabilitation services point to a critical need for evidence based criteria that would determine which patients stand to benefit the most (recovery/stabilization) from specific rehabilitative programs. Further investigations are needed to define which parameters can predict the rehabilitative potential of various types of therapy that focus on physical, psychological, and social approaches, and whether the potential recovery of old subjects is influenced by different techniques (OT programs).

APM Association of Professors of Medicine

Geriatric Medicine: It's More Than Caring for Old People

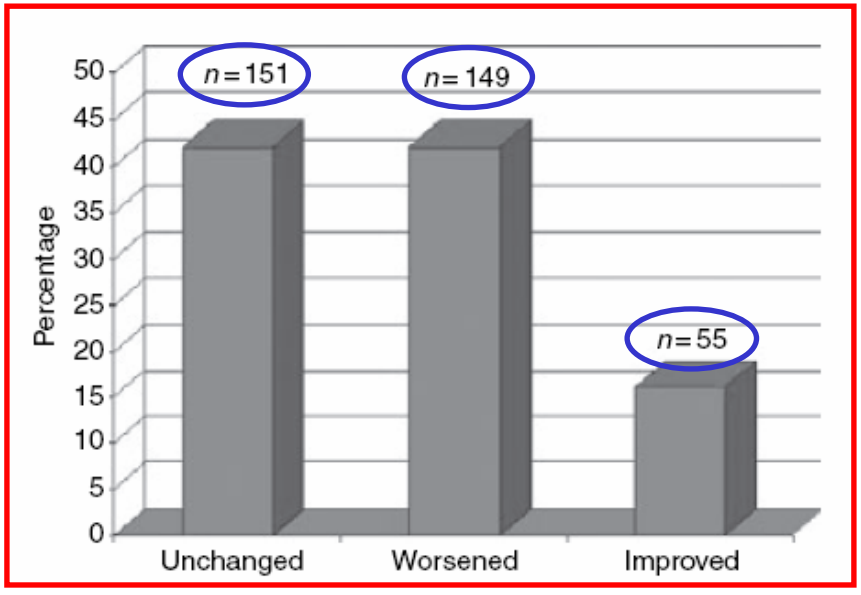
(...) "the defining feature of geriatric medicine is not age, but rather the intense focus on the preservation and restoration of function. Because optimizing function is central to persons of all age groups who are afflicted with chronic disease or disability, many of the fundamental principles and practices of geriatric medicine are broadly applicable across disciplines and subspecialty areas. The underlying premise of this commentary is that geriatric medicine represents more than caring for old people; it is a mind-set, a way of thinking that can be incorporated into clinical practice to improve the health and well-being of patients with chronic disease or disability across the continuum of age." (...) "The overall goal of chronic care is not to cure, but rather to help persons with chronic conditions maintain independence and a high level of functioning. Geriatricians bring special expertise to the management of patients with chronic conditions across multiple sites of care. (...)

Gallo JJ, Am J Med 2002;113:85-90

Descriptive analysis of baseline parameters of patients with stroke, according to gender

Characteristics	Total (n = 355)	Male (n = 161)	Female (n = 194)
Age (mean ± SD)	77.4 ± 9.7	75.9 ± 9.2	78.7 ± 9.9
Marital status			
Married	174 (48)	115 (71)	59 (30)
Widowed	150 (42)	36 (22)	114 (59)
Never married	31 (9)	11 (7)	20 (11)
Living alone	48 (13)	16 (10)	32 (16)
ADL score (mean ± SD)	5.4 ± 1.5	5.4 ± 1.4	5.3 ± 1.6
IADL score (mean ± SD)	6.1 ± 1.2	6.2 ± 1.2	6.2 ± 1.3
CPS score (mean ± SD)	2.6 ± 2.0	2.3 ± 1.8	2.9 ± 2.1
Comorbidity (mean ± SD)	3.6 ± 2.3	3.4 ± 2.2	3.8 ± 2.4

Change in functional performance from baseline to follow-up

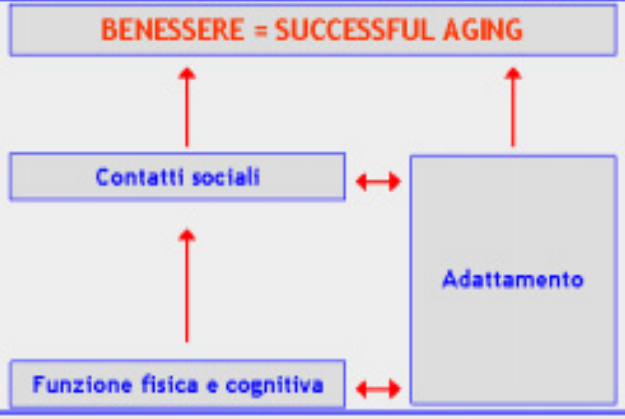


Landi et al. Eur J Neurol 2006; 13:17-23

LA SCELTA IN FUNZIONE DELL'OBIETTIVO

A) ***Analisi oggettiva dello stato di salute globale mediante strumenti oggettivi di valutazione multidimensione***: il 13% degli ultraottantacinquenni raggiunge un punteggio ottimale in tutti i domini indagati.

B)***Percezione soggettiva degli stessi soggetti***: la vecchiaia di successo viene identificata con il senso di benessere derivante dalla possibilità di conciliare/adattare le proprie capacità funzionali alle relazioni sociali. Il 45% degli ultraottantacinquenni - percentuale molto più alta del 13% derivante dall'analisi oggettiva - ritiene di essere in una tale condizione di benessere.



CD Multimediale
PU Carbonin

Fig. 1

Outcomes = f (Baseline, Risk Factors, Treatment, Environment)

Fig. 1. Basic outcomes model.
From: Kane: Med Care, Volume 35(6) Supplement.June 1997.JS21-JS27

Nell'affrontare i problemi del malato anziano fragile si può essere all'inizio colti da un senso di impotenza. Avendo presenti i successi ottenuti dalla medicina in tutti gli altri campi, può venir da pensare: “*Tanto è vecchio, non vi è nulla da fare!*“

Rendere indipendente un soggetto emiplegico nella propria casa, evitandone l’istituzionalizzazione o impedire le piaghe da decubito in un anziano allettato sono i problemi di tutti i giorni del geriatra; ma sono anche esempi utili per capire il vero significato del “piccolo guadagno” in funzione della qualità della vita.

Se tutto ciò non è servito a convincere il lettore, è bene che egli non diventi mai un geriatra!

V. Strategie di intervento

- fisioterapia
- terapia occupazionale

Occupational Therapy for Stroke Patients

A Systematic Review

Esther M.J. Steultjens, MA; Joost Dekker, PhD; Lex M. Bouter, PhD; Jos C.M. van de Nes, MD; Edith H.C. Cup, MSc; Cornelia H.M. van den Ende, PhD

Background and Purpose—Occupational therapy (OT) is an important aspect of stroke rehabilitation. The objective of this study was to determine from the available literature whether OT interventions improve outcome for stroke patients.

Methods—An extensive search in MEDLINE, CINAHL, EMBASE, AMED, and SCISEARCH was performed. Studies with controlled and uncontrolled designs were included. Seven intervention categories were distinguished and separately analyzed. If a quantitative approach (meta-analysis) of data analysis was not appropriate, a qualitative approach (best-evidence synthesis), based on the type of design, methodological quality, and significant findings of outcome and/or process measures, was performed.

Results—Thirty-two studies were included in this review, of which 18 were randomized controlled trials. Ten randomized controlled trials had a high methodological quality. For the comprehensive OT intervention, the pooled standardized mean difference for primary activities of daily living (ADL) (0.46; CI, 0.04 to 0.88), extended ADL (0.32; CI, 0.00 to 0.64), and social participation (0.33; CI, 0.03 to 0.62) favored treatment. For the training of skills intervention, some evidence for improvement in primary ADL was found. Insufficient evidence was found to indicate that the provision of splints is effective in decreasing muscle tone.

Conclusions—This review identified small but significant effect sizes for the efficacy of comprehensive OT on primary ADL, extended ADL, and social participation. These results correspond to the outcome of a systematic review of intensified rehabilitation for stroke patients. The amount of evidence with respect to specific interventions, however, is limited. More research is needed to enable evidence-based OT for stroke patients. (***Stroke*, 2003;34:676-687.**)

Key Words: meta-analysis ■ occupational therapy ■ stroke

Editorial Comment

Occupational Therapy for Stroke Patients: When, Where, and How?

Technological advances in medicine and increasing longevity in the general population have contributed to the growing number of physically disabled persons in Western countries. Functional impairment following acute illness (eg, stroke) frequently has devastating consequences, and the past several decades have witnessed increasing needs for multidisciplinary rehabilitation interventions. Occupational therapy, an essential part of rehabilitation, offers a wide range of interventions to facilitate independence among disabled patients. In recognition of occupational therapy as a key component in the multidisciplinary rehabilitation of stroke patients, this issue of *Stroke* includes a report from Steultjens and colleagues, who have documented the positive results of comprehensive occupational therapy programs on primary activities of daily living (ADLs), extended ADLs, and social participation of stroke survivors. This systematic review, in conjunction with other scientific evidence, contributes significantly to our pool of knowledge about occupational therapy research, an area that remains poorly studied. Nonetheless, a number of issues related to interventions for patients with impaired physical function following acute illness need to be addressed.

When Is Occupational Therapy Appropriate for Stroke Patients?

The goal of occupational therapy is to restore functional independence, when possible, and to facilitate psychosocial adjustment to residual disability. Unfortunately, criteria for selection of patients who would most benefit from participation in occupational therapy programs have yet to be precisely defined. The heterogeneity of functional and health problems experienced by stroke patients makes it difficult to evaluate multiple outcomes of rehabilitation. Valid negative predictors of functional recovery after acute events likely include age, urinary incontinence, cognitive impairment, delirium, functional deficits present at admission, and level of social support.[1,2] Other factors, however, make it difficult to draw definitive conclusions about the efficacy and cost-effectiveness of occupational therapy programs. These include the characteristics of the studied population and of the rehabilitation setting, the types of assessments and/or interventions, and the use of varying outcome measures.

Given the potential conflict between the increasing demand for occupational therapy programs and the development of health care services that limit the availability of rehabilitation beds, identification of stroke patients who could potentially gain improved function from such services is imperative. Although Steultjens and colleagues report a significant effect of occupational therapy on primary and extended ADLs and on social participation, the trials included in their study were very heterogeneous. The characteristics of stroke patients varied significantly, given the types of stroke and acute treatments (ie, in one trial, patients were not admitted to the hospital while in another, they were admitted to the acute stroke unit). The treatments themselves (ie, rehabilitation programs) were not similar to each other: a leisure activity intervention is not the same as an occupational therapy program. The duration of treatment significantly differed (from 30 minutes per week to 1 hour per 5 days a week), and the length of follow-up ranged from 4 weeks to 20 weeks. Furthermore, the current report provides no information concerning the effectiveness of occupational therapy programs in reducing health services use and relative costs for stroke patients. Comprehensive cost-effectiveness analyses and cost-benefit analyses are, therefore, needed to strengthen

Where Is the Appropriate Place to Implement an Occupational Therapy Program?

Despite the growing body of evidence suggesting that improved functional performance after rehabilitation programs may relate to early initiation of treatment,[4] findings are inconclusive concerning where occupational therapy should take place. Postacute hospital settings, day care programs, home care programs, and skilled nursing facilities are the most frequent settings for current rehabilitation programs that target stroke patients. A changing health care system necessitates that occupational therapy programs focus more on the long-term health needs of disabled persons, helping them to improve functional performance while reducing the health care costs associated with disabilities. It is noteworthy that most trials included in the systematic review of Steultjens and colleagues were conducted as a part of home care programs.

Occupational therapy programs need to be client and family oriented, offering services that range from an institutional setting (ie, postacute hospital) to the community (ie, home care). The occupational therapist may represent the health caregiver who can best provide continuity of care for patients who are being evaluated to join rehabilitation programs, who enter the postacute care hospital, then move back to their homes or to an institutional setting. Therefore, the challenge is to develop occupational therapy programs that improve and/or maintain daily functions of stroke survivors in the community across a continuum of primary and secondary care. A multidisciplinary approach, along with integration of medical, rehabilitative (occupational and physical therapy), and social services into a patient's follow-up care, has already proven to decrease mortality and length of hospital stay, while improving the quality of life in a significant proportion of stroke-dependent patients, including those previously considered to be ineligible for a rehabilitation program.[1,4,5]

What Is the Best Way to Implement an Occupational Therapy Program?

Steultjens and colleagues note that a major challenge in summarizing the usefulness of occupational therapy relates to the great variability in interventions, which are implemented in very different occupational therapy settings and in numerous countries.[6] Finally, one should be able to tease out those Steultjens et al does provide detailed information about the occupational therapy programs utilized in the analyzed trials. Nonetheless, we believe that a more precise understanding of the prognostic value of physical therapy (ie, specific exercise programs), as opposed to occupational therapy interventions or integrated multidisciplinary approaches, warrants future research.

Poststroke occupational therapy programs will have even greater relevance in the future, given the increasing morbidity and longevity in the population. Increased independence in self care and mobility can enhance quality of life and diminish the health care system burden. However, the emerging lack of resources for health care services in industrialized nations and, in particular, the increasingly limited availability of rehabilitation services point to a critical need for evidence-based criteria that would determine which patients stand to benefit the most (in terms of potential for recovery) from specific occupational therapy programs. Further investigations are needed to define which parameters can predict the rehabilitative potential of various types of therapy that focus on physical, psychological, and social approaches, and whether the potential recovery of stroke subjects is influenced by different techniques and/or occupational therapy programs.

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Participation *or* Handicap?