

Activities of Daily Living (ADLs): Overview

The Guide to Physical Therapist Practice “defines disability broadly as the inability or restricted ability to perform actions, tasks, and activities related to required self-care...and roles in the individual’s sociocultural context and physical environment...Thus the concept of disability includes deficits in the performance of ADLs (activities of daily living)” (Guide to Physical Therapist Practice, 2001). There are various definitions of ADL disability, but regardless of definition, “the majority of older adults living in nursing homes require some assistance with activities of daily living” (Aller & Coeling 1995). Approximately 91% require assistance with bathing, followed by 78% in dressing... and 40% in eating. Almost two-thirds require assistance in transferring from bed to chair, and about the same percentage have walking difficulties (Resnick, 1999).

“For long stay residents in nursing homes, functional decline is often viewed as an inevitable consequence of chronic disease, cognitive disability, and extreme age. Too frequently the forces driving functional decline are viewed as immutable ...The central issue is one of attention to the possibility of breaking this cycle of decline” (Morris, 1999). The evidence is overwhelming that health care providers can influence the functional outcomes of nursing home residents. Health professionals will play an even greater role in treating function and disability as our aging population expands. Kunkel and Applebaum (1992) project that by the year 2020, from 9.7 to 13.6 million older people will have moderate to severe disability.

These ADL-related materials are intended as a resource for nursing home staff to help residents improve their abilities to manage self-care activities; that is, “...the ability to perform activities of daily living (ADL) such as bed mobility, transfers, dressing, grooming, bathing, eating, and toileting” (Guide to Physical Therapist Practice, 2001). Although ADLs encompass all these self-care activities, the materials provided in this packet, focus primarily on the four late-loss ADLs of *bed mobility*, *transfers*, *toilet-use* and *eating*. These four activities are standard ADL items scored on all resident Minimum Data Set (MDS) assessments, and are key components of the ADL index for Resource Utilization Group (RUG) categories. The Centers for Medicare & Medicaid Services have also identified ADL decline, for *bed mobility*, *transfers*, *toilet-use* and *eating*, as one of the quality measures for nursing homes to publicly report, beginning in October, 2002.

Models of Functioning and Disability

A number of disablement models have emerged during the past three decades (ICIDH, Nagi, ICF). All of the disablement models attempt to better delineate the interrelationships among disease, impairments, functional limitations, disabilities, handicaps, and the “effects of the interactions of the person with the environment” (Brandt et al.) though the effects themselves may be defined differently from model to model (Guide to Physical Therapist Practice, 2001).

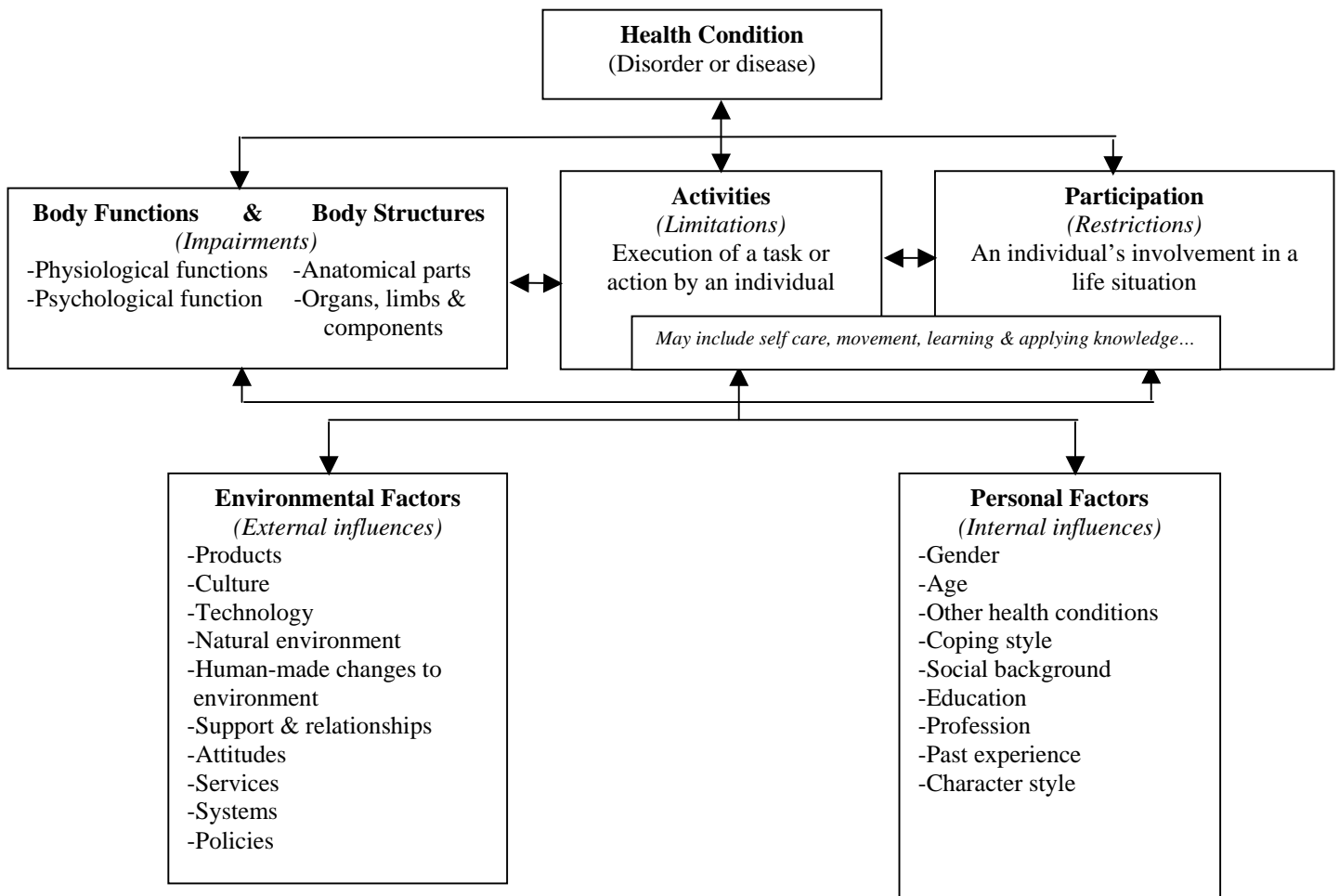
International Classification of Functioning, Disability and Health (ICF) offers a useful model of functioning and disability. ICF represents a revision of the International Classification of Impairments, Disability and Handicaps (ICIDH), which was first published by the World Health Organization (WHO) for trial purposes in 1980. The ICF model differs significantly from the

1980 version of the ICIDH in the depiction of the interrelations between functioning and disability (WHO, 2001).

The ICF model provides a multi-perspective approach to the classification of functioning and disability as an interactive and evolutionary process. A person's functioning and disability is conceived as a dynamic interaction between health conditions (disease, disorders, injuries, traumas, etc.) and contextual factors (environmental and personal).

The figure below may help with visualizing the “current understanding of interaction of various components” of the functioning and disability model.

Figure: Interaction Between Components of the ICF 2001 (WHO, 2001)



Interaction Between Health Components, Function, and Disability

Many signs and symptoms, and many of the conditions that affect a person's ability to function, are not associated with a single active pathology/pathophysiology, nor are they always found to have an impact exclusively on a single system of origin (Guide to Physical Therapist Practice, 2001). "Thus it is important... to distinguish health conditions from the functional disability that they may cause" (Parmelee, 1995).

The ICF model of functioning and disability underscores the importance of interactions between all components of health (physiological, psychological, anatomical, activity or participation-related, personal, and/or environmental). Understanding the influence of health components in totality, rather than in isolation, is particularly important when evaluating function in the geriatric population. "The approach to disability in the older person must consider both the person and his/her environment as well as the underlying diseases. Geriatric disability is often multi-causal, and a variety of factors can increase or decrease the likelihood of disability..." (Hoenig, 1997).

"Medical stability, cognitive function, patient motivation, and duration of disability may all modify the use of rehabilitation interventions and/or alter the goals of rehabilitation" (Kemp, 1990). For some conditions it may be necessary to resolve acute medical problems before a meaningful assessment of rehabilitation potential can be made (e.g. delirium, pneumonia) or before starting rehabilitation (e.g. hemodynamic stabilization before beginning...stroke rehabilitation)" (Hoenig, 1997).

Stineman (1997) has suggested that the effect of medical comorbidity on rehabilitation should not be overlooked, because comorbid illness can influence the expression of disability: "The findings suggest that geriatric rehabilitation patients experience considerable medical comorbidity...Medical comorbidity was a significant predictor of rehabilitation efficiency (ratio of gains made in functional independence divided by the patient's length of stay) in geriatric patients...medical comorbidity predicted both the overall functional change achieved...and the rate at which those gains were reached."

Clinical conditions producing impairment, and potentially functional decline and disability, in the elderly include adverse drug reactions, delirium, psychosis, depression, fluid/electrolyte imbalance, cognitive deficits, pain, sensory deficits, immobility, aspiration, pneumonia, nutritional deficits, skin breakdown, and neuro-musculoskeletal disorders. The list of possible health conditions impacting older residents' functional abilities may seem discouraging. But the clinician should not be deterred, "...comorbidity and clinical instability are both treatable and do not constitute ungovernable obstacles to rehabilitation. Their negative effects on outcomes can be limited if conditions are managed by an adequate, comprehensive approach" (Bernardini et al., 1995).

Social and psychological factors play a key role in a nursing home resident's willingness and ability to participate in self-care activities. These factors include cognition, attitudes, perceptions and depression. There is ... "evidence to suggest that dependency in this population is associated with mental health problems such as low self-esteem (Taft 1985; Blair 1992), a negative state of well being (Baltes et al., 1991), and problems with mood (Whall, 1987). Low

self-esteem is a major manifestation of depression (Lewinsohn and Rohde, 1987). Self-esteem and depression are strong predictors of mortality among the elderly (O'Conner and Vallerand, 1998)" (Blair, 1999).

Institutional variables also influence ADL outcomes. "The large majority of nursing home residents are...at risk of premature functional loss and institutionally induced dependency...Barriers include lack of institutional support (for restorative initiatives, lack of professional staff training in specific rehabilitative methodologies, misconceptions about the benefits of initiating rehabilitative practices, and lack of availability of exercise equipment and space)" (Morris, 1999). Other research cites increased length of stay in facilities as a contributing factor for residents' ADL decline (Walk et al., 1999).

Studies show that for older adults who are already institutionalized, further loss of function alters the type and amount of nursing required (Waters, 1994), and puts the individual at risk of sequelae from immobility (Ouslander et al., 1991) and has a major impact on quality of life (Jirovec and Kasno, 1993; Kaplan et al., 1993; Mulrow et al., 1994; Oleson et al., 1994; Ettinger et al., 1997). As much as 15% of the variance in life satisfaction has been accounted for by functional independence" (Gould, 1992) (Resnick, 1999).

Progression from a healthy state to pathology—or from pathology or impairment to disability—does not have to be inevitable (Guide to Physical Therapist Practice, 2001). Federal and State regulations for activities of daily living, as explained in the State Operations Manual Guidance to Surveyors – Long Term Care Facilities, states that "based on a comprehensive assessment of a resident", nursing homes put systems and clinical practices into place to "ensure that a resident's abilities in activities of daily living do not diminish unless circumstances of the individual's clinical condition demonstrate that diminution was unavoidable" (SOM HCFA- F310).

Examination and Evaluation

The key to preventing functional impairment lies in timely, ongoing, systematic assessment to detect risk and provide intervention(s) to prevent adverse outcomes (St. Pierre, 1998). The examination and evaluation process will allow the clinician to detect significant health components impacting functional decline, and will produce data critical to the development of a working diagnosis and effective plan of care.

It is important to use validated, standardized measures of functional performance and activity capacity to establish objective baseline measures, monitor progress, and evaluate outcomes. Instruments used to assess physical function "differ in their validity, reliability and usefulness in various clinical settings...(it is key for) clinicians to have a specific goal or rationale in mind before choosing an assessment instrument" (Applegate et al., 1990). Tools measuring functional abilities are most widely used for "establishing a baseline description, screening for risk factors...setting rehabilitation or therapeutic goals, and monitoring the patient's clinical course" (Applegate et al., 1990)

Two commonly used tools to assess basic ADLs include the Katz ADL scale and the Barthel index. The Katz ADL scale is an appropriate instrument "to assess functional status as a measurement of (the resident's) ability to perform ADLs independently. (It) ranks adequacy of

performance in the six functions of bathing, dressing, toileting, transferring, continence and feeding” (Shelkey et al., 1999). The Barthel index assesses a “slightly broader range (of ADLs) than the Katz ADL scale (and) includes stair climbing, wheelchair use” (Applegate et al., 1990).

“Scores from standard assessment instruments provide...an objective means of following clinical progress...and such data can often be collected by nurses or therapists and charted on a flow chart for ease of use and comparison” (Applegate et al., 1990). These ADL scores can then serve as a foundation for measuring functional outcomes and effectiveness of interventions.

Health professional and/or physical therapist uses the results of...tests and measures to assess the level of performance of tasks necessary for independent living; the need for assistive, adaptive, orthotic, protective, supportive, or prosthetic devices or equipment; and the need for body mechanics training, organized functional training programs, or therapeutic exercise (Guide to Physical Therapist Practice, 2001).

Results of tests and measures... (and other associated data) are then synthesized during the evaluation process to establish the diagnosis, the prognosis, and the plan of care, which includes the selection of interventions (and may also include) the need to use or recommend other tests and measures or the need to consult with, or refer the patient/client to, another professional (Guide to Physical Therapist Practice, 2001).

Interventions and Outcomes

“...The goal of rehabilitation—enabling the patient to achieve the fullest possible life compatible with his/her abilities and disabilities—requires primary, secondary and tertiary prevention. Treatment choices during rehabilitation phases are designed to reduce the burden of disease and impairments, prevent the development of secondary conditions, and promote optional function within the limits of diseases and impairment that cannot be altered” (Hoenig, 1997).

Rehabilitation interventions to improve functional abilities may include (Guide to Physical Therapist Practice, 2001):

- Functional training in self care and ADL training in: bed mobility & transfer training, eating, toileting
- Therapeutic exercise
- Barrier accommodations or modifications
- Device and equipment use and training
- Functional training in a simulated environment
- Task adaptation
- Injury prevention or reduction, education, safety awareness training
- Restorative nursing programs
- Education, training of resident, family and caregivers
- Referrals to other professionals, as appropriate

Health professionals selecting rehabilitation interventions will also want to be aware of studies that have determined a hierarchy to activities of daily living, by which they decline, and conversely improve. The pattern of ADL decline suggests implications for planning and

treatment in the nursing home setting. “In order to plan and develop the care of frail older persons, it is important to know the order in which the ability to perform activities of daily living are lost...” (Cohen-Mansfield et al., 1995) and subsequently recovered.

The order of improvement for the four activities in Walk et al. (1999) is eating, bladder continence, mobility and bathing (the same order found by Katz et al., 1963) (Walk et al., 1999). “The hierarchical order of ADLs was confirmed in the institutional environment. Therefore, intervention programs should be implemented according to this hierarchy of functional improvement. For example, an elderly resident who needs assistance in eating should not be encouraged to bathe himself before he has regained the prior functions (eating, bladder continence, mobility) in the hierarchy” (Guide to Physical Therapist Practice, 2001).

A range of interventions, within the rehabilitation domain, and within other health professionals’ domains, may be appropriate for improving functional abilities. After the treatment interventions have been completed ... “the patient should continue to be monitored regularly for any decline in function using one of the many available functional assessment instruments and appropriate evaluation and intervention initiated in the event of decline” (Hoenig et al., 1996)

Summary

Progression from a healthy state to pathology—or from pathology or impairment to disability—does not have to be inevitable (Guide to Physical Therapist Practice, 2001) Key steps for optimizing functional abilities in aging nursing home residents include, identification of health components impacting function and disability, prompt treatment of significant conditions, matching interventions with specific conditions, managing general health throughout all stages of treatment, preventing complications from developing, assessing resident’s response to treatments, measuring functional performance and revising interventions and care plans based on outcomes (AHCPR, 1995).

“The institutional setting can act as an agent of either improvement or decline. To act as an improvement agent, staff should be trained to encourage residents to develop independence and to foster a sense of control over their lives” (Walk et al., 1999). In addition to managing residents’ general health, “a facility-wide nursing rehabilitation program can play a useful role in reversing functional decline, (and) helping residents to maintain their involvement in a broad spectrum of ADL activities” (Morris, 1999) It has been shown that “frontline caregivers who have appropriate knowledge and skills will foster independent ADLs in residents (and) able residents will reestablish self-care behaviors if encouraged to do...” (Blair, 1999).

References

Agency for Health Care Policy & Research and Quality (AHCPR). Clinical Practice Guideline, Post-Stroke Rehabilitation, Quick Reference Guide for Clinicians, Number 16, 1995.

Guide to Physical Therapist Practice, Second Ed. *Phys Ther* 2001; 8: 9-744.

Aller L and Coeling H. Quality of Life: Its Meaning to the Long-Term Care Resident. *Journal of Gerontological Nursing* 1995; 21(2): 20-25.

Applegate et al. Instruments for the functional assessment of the older patients. *New England Journal of Medicine* Apr 1990; 322(Hoenig et al., 1996): 1207-14.

Baltes MM, Wahl HW, and Reichert M. Institutions and successful aging for the elderly? *Annual Review of Gerontology and Geriatrics* 1991; 11: 311-337.

Bernardini B, Meinecke C, Pagani M, et al. Comorbidity and adverse clinical events in the rehabilitation of older adults after hip fracture. *J AM Geriatr Soc* 1995; 43: 894-898.

Blair, CE. Effect of self-care ADLs on self-esteem of intact nursing home residents. *Issues in Mental Health Nursing* 1999; 20: 559-570.

Brandt EN Jr, Pope AM (Eds.). Enabling America: Assessing the Role of Rehabilitation Science and Engineering. Washington, DC: Institute of Medicine, National Academy Press; 1997: 62-80.

Cohen-Mansfield et al. Temporal order of cognitive and functional loss in nursing a home population. *Journal of the American Geriatric Society* Sep 1995; 43: 974-8.

Ettinger W, Burn R, Messier S, et al. A randomized trial comparing aerobic exercise and resistance exercise with a health education program in older adults with knee osteoarthritis. *Journal of the American Medical Association* 1997; 277: 25-31.

Guide to Physical Therapist Practice. American Physical Therapy Association, Alexandria, VA. 2nd Edition. *Phys Ther* 2001; 81: 9-744.

Gould M. Nursing home elderly: Social environmental factors. *Journal of Gerontological Nursing* 1990; 18(8): 13-20.

Hoenig H, Nusbaum N, Brummel-Smith K. Geriatric rehabilitation: State of the art. *J AM Geriatr Soc* 1997; 45: 1371-1381.

Hoenig et al. In McDowell J, Newell C. Measuring health: A guide to rating scales and questionnaires. New York: Oxford University Press, 1996.

Jirovec M and Kasno J. Self-care among the institutionalized elderly. *Western Journal of Nursing Research* 1993; 15, 314-326.

Kaplan G, Strawbridge W, Camcho T, and Cohen R. Factors associated with change in physical functioning in the elderly. *Journal of Aging and Health* 1993; 5(1): 140-153.

Katz S, Ford AB, Moskowitz RW, Jackson BA and Jaffe MW. Studies of illness in the aged: The index of ADL: A standardized measure of biological, and psychosocial function. *Journal of the American Medical Association* 1993; 185: 914-9.

Kemp B. Motivational dynamics in geriatric rehabilitation: Toward a therapeutic model. In: Kemp B, et al. Geriatric rehabilitation. Boston, MA: Little, Brown, and Co., 1990. Pp. 295-306.

Kunkel SR, Applebaum RA. Estimating the prevalence of long term disability for an aging society. *J Gerontol* 1992; 47: 5253-260. In Hoenig H, Nusbaum N, Brummel-Smith K. Geriatric rehabilitation: State of the art. *J AM Geriatr Soc* 1997; 45: 1371-1381.

Lewinsohn PM, and Rhode P. Psychological measurement of depression: Overview and conclusions. In: The measurement of depression. Marsella AJ, Hirschfield RMA, and Katz MM (Eds.). New York: The Guilford Press, 1987. Pp. 240-66.

Morris et al. Nursing rehabilitation and exercise strategies in the nursing home. *Journal of Gerontology: Medical Sciences* Oct 1999; 54 (Bernardini et al., 1995): M494-500.

Mulrow C, Gerety M, Kanten D, et al. A randomized trial of physical rehabilitation for very frail nursing home residents. *Journal of the American Medical Association* 1994; 271: 519-524.

O'Connor BP and Vallerand RJ. Psychological adjustment variables as predictors of mortality among nursing home residents. *Psychology and Aging* 1998; 13: 368-374.

Oleson M, Heading C, Shadick K, and Bistodeau J. Quality of life in long-stay institutions in England: Nurse and resident perceptions. *Journal of Advanced Nursing* 1994; 20: 23-32.

Ouslander J, Osterweil D and Morley J. Medical care in the nursing home. New York: McGraw-Hill, 1991.

Parmelee PA, Thuras PD, Katz IR, Lawton MP. Validation of the cumulative illness rating scale in a geriatric residential population. *J AM Geriatr Soc*. 1995; 43: 130-137.

Patrick L, Knoefel F, Gaskowski P, Rexroth D. Medical comorbidity and rehabilitation efficiency in geriatric inpatients. *J AM Geriatr Soc* 2001; 49: 1471-7.

Resnick, B. Motivation to perform activities of daily living in the institutionalized older adult: Can a leopard learn to change its spots? *Journal of Advanced Nursing* 1999; 29(Kunkel, 1992): 792-9.

Shelkey et al. Try this: Best practices in nursing care to older adults. *Journal of Gerontological Nursing* Mar 1999.

St. Pierre J. Functional decline in hospitalized elders: preventive nursing measures. *AACN Clinical Issues* Feb 1998; 9: 109-18.

State Operations Manual, US Department of Health and Human Services, Health Care Financing Administration. Guidance to Surveyors - Long Term Care Facilities. HCFA Publication 7, PB 98-950000, Appendix PP, Federal Tag 310. Pp. 84-90.

Stineman MG. Measuring case-mix, severity, and complexity in geriatric patients undergoing rehabilitation. *Med Care* 1997; 36: 106-112.

Taft L. Self-esteem in later years: A nursing perspective. *Advances in Nursing Science* 1985; 8: 77-84.

Walk et al. Functional improvement of elderly residents of institutions. *The Gerontologist* 1999; 39: 720-8.

Waters K. Getting dressed in the early morning: Styles of staff/patient interaction on rehabilitation hospital wards for elderly people. *Journal of Advanced Nursing* 1994; 19: 239-47.

Whall AL. Self-esteem and the mental health of older adults. *Journal of Gerontological Nursing*. 1987; 13: 41-42.

World Health Organization (WHO), Classification Assessment Surveys & Terminology Group, ICF 2001. Introduction. Online: www.who.int/classification/icf

This material was prepared by the Kansas Foundation for Medical Care, Inc. (KFMC), the Medicare Quality Improvement Organization for Kansas, under contract with the Centers for Medicare & Medicaid Services (CMS), an agency of the U.S. Department of Health and Human Services. The contents presented do not necessarily reflect CMS policy. Publication# 8SOW-KS-NHQI-08-45.

