

Functional Assessment: An annotated bibliography

Compiled and annotated by

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Alexander JL, Willems EP: **Quality of life: Some measurement requirements.** *Arch Phys Med Rehabil* 62: 261-266, 1981.

The authors contend that the current, popular view of the quality of life neglects to consider the reciprocal relationship between persons and their environments. This ecological view is presented conceptually by summarizing two analyses of data on the daily functional performance of 15 spinal cord-injured patients during hospitalization.

The first analysis reveals various dimensions of the patients' behavior during the entire period of their hospitalization. Such behavioral vital signs represent the minimum requirements for measuring quality of life. In the second analysis, the data on performance in the hospital were used to predict patient functioning after discharge into the community. An extremely high level of predictive validity was found.

The authors conclude that to obtain an accurate indication of the quality of life, the measurements must include quantitative indices of what persons do and where, how, and with whom they do it. This approach is important to rehabilitation, for it relates to one of its important goals—that of reintegrating disabled persons into society and enhancing the quality of life therein.

Anthony WA: **The rehabilitation approach to diagnosis.** In: *New Directions for Mental Health Services*, No. 2, Lamb HR (ed.). San Francisco: Jossey-Bass, 1979.

Research has shown that psychiatric patients can learn a variety of physical, emotional, and intellectual skills

regardless of their symptoms. Psychiatric diagnosis, with its emphasis on labeling the client and categorizing symptoms, is of little use in predicting the results of rehabilitation. The rehabilitation diagnosis, in contrast, involves collecting information about the client's current abilities and about those demanded by the community in which he or she needs to function.

In order to achieve a comprehensive rehabilitation evaluation, the diagnostician must take the client through three steps: exploration, understanding, and assessment. In the exploration stage, the diagnostician encourages the client to talk meaningfully about his or her presenting problem and rehabilitation goal. In the second stage, understanding, the diagnostician and client identify the client's strengths and weaknesses in relation to the goals. Finally, in the assessment stage, the diagnostician must operationalize each skill, i.e., define it in a way that permits the behavior to be observed and measured.

Anthony WA, Cohen MK, Cohen BF: **Philosophy, treatment process, and principles of the psychiatric rehabilitation approach.** In: *New Directions for Mental Health Services: Deinstitutionalization* (no. 17), Bachrach L (ed.). San Francisco: Jossey-Bass, 1983.

The authors clarify what is meant by the psychiatric rehabilitation approach. As in physical rehabilitation, rehabilitation with the psychiatrically disabled client focuses on diagnosing and building client skills. Goals are environmentally specific.

The psychiatric rehabilitation diagnosis yields information about the client's level of skill development and resources relative to the demands of the community in which he or she wants or needs to function, rather than labeling or categorizing symptoms. Such information enables the practitioner to work with the client to develop a treatment plan to increase specific skills and/or to identify and develop an environment more supportive of his or her functioning.

This bibliography on the concepts and practices of functional assessment originally appeared in *Interconnector* (Vol. 8 No. 1, Jan. 1985), the newsletter of the University Center for International Rehabilitation (UCIR) at Michigan State University, East Lansing, MI.

Although there are a number of ways in which treatment success might be measured, the crucial variables in psychiatric rehabilitation revolve around client gains. If the client's functioning in a particular environment has not improved, then no rehabilitation benefits have accrued.

Badley EM, Thompson RP, Wood PHN: **The prevalence and severity of major disabling conditions: A reappraisal of the government social survey on the handicapped and impaired in Great Britain.** *Int J Epidemiol* 7(2): 145-151, 1978.

The government social survey of handicapped and impaired persons in Great Britain has generated a large amount of information on the disabled in Britain. Despite this information there appears to be a gap in understanding the problems of persons with disabilities. This paper reexamines the data gathered for the survey, with which there are two major problems. An attempt is made to explore the second of these difficulties, the need to interrelate the various characteristics of disability as a single, whole pattern to help improve services.

The basic cause of disability is considered in relation to severity and prevalence of occurrence. When these factors are examined together, stroke, arthritis, and circulatory disorders are seen to be the most common cause of severe disability in the community, and as such, should be paid more attention.

Berven NL: **Assessment practices in rehabilitation counseling.** *J Appl Rehabil Couns* 15(3): 9-14, 47, 1984.

The author examines the process of rehabilitation assessment, including collection and interpretation of data and its use in making clinical decisions and determinations.

Rehabilitation's future is predicted to include greater use of new information-gathering and organizing devices such as functional assessment instruments and increased application of computers for assessment and interviewing.

More research is necessary to provide validity data on existing vocational assessment instruments, on standardized tests and inventories modified for handicapped persons, and on the process by which rehabilitation counselors interpret assessment data and transform that information into service plans.

Brown M, Diller L, Gordon WA: **Functional assessment and outcome measurement: An integrative review.** In: *Ann Rev Rehabil*, Pan EL, Backer TE, Vash CL (eds.). New York: Springer Publishing Company, 1982, vol. 3.

Rehabilitation professionals often search for specific approaches to either outcome measurement or functional assessment. The authors assert that outcome measurements and functional assessment can be operationally and conceptually related, benefiting the rehabilitation systems within which they are used.

Outcome definitions are examined and outcome measurement methods that have been used to better serve the needs of rehabilitation administrators are explored. Outcome-oriented research, the authors say, is imperative to enhance comprehension of the nature of disability and the efficacy of rehabilitation services.

The authors' objective is to help instrument reviewers choose assessment devices that will maximize utility. Increasing the variety of needs addressed with the same set of data and expanding the diversity of the target audience who will benefit from the available information bring increased effectiveness.

General measurement issues in rehabilitation, a comprehensive model of change in rehabilitation, and implications for outcome research are discussed.

A conceptual model is provided by portraying linkages between functional assessment and outcome measurement. Specific factors applicable to selection of measurement instruments are then related to seven recently developed assessment instruments used in diverse rehabilitation settings. Sources of additional information on each instrument are also listed.

Crewe NM Athelstan GT: **Functional assessment in vocational rehabilitation: A systematic approach to diagnosis and goal setting.** *Arch Phys Med Rehabil* 62: 299-305, 1981.

Functional assessment is used increasingly as a tool to evaluate, describe, and classify clients in vocational rehabilitation. This paper focuses on the *Functional Assessment Inventory* (FAI), a set of scales used to evaluate limitations resulting from disability. The authors describe a field test of the FAI to gather initial validity data on its use as a diagnostic tool.

The study demonstrates a method by which experienced vocational rehabilitation counselors can reliably assess functional limitations. This study produces factor

analytically derived scales of functional limitations that are correlated with the traditional medical diagnostic classifications now commonly used in vocational rehabilitation.

The authors argue that the FAI is primarily diagnostic. It identifies strengths and limitations that may or may not be modified but which need to be taken into account in developing a rehabilitation plan. Pointing out the obstacles to rehabilitation may be helpful in determining what services are needed, even if no attempt is made to directly modify the limitations.

By demonstrating a way to accurately assess functional limitations, this study is extremely useful to vocational rehabilitation counselors. Whether functional limitations relate to actual employment outcomes, however, is a subject of future research.

Davies P: **Sociological measures of disability and rehabilitation outcome.** Paper presented at the Society for Research in Rehabilitation Conference, St. Catherine's College, Oxford, United Kingdom.

While the field of sociology is little involved in direct rehabilitation client services, the social antecedents and outcomes of disability are gaining attention in the field, with possible benefits to rehabilitation professionals. Sociological research examines many of the "macro-issues" that are critical to successful service provision.

Research has examined social factors related to disability such as stigma, social class, the variable of environment on functional performance, and family influences on rehabilitation outcome from both positivist-empiricist and phenomenological approaches.

The effects of injury and disability on income and housing may be measured, for example, to assess degree of handicap over time. Such lifestyle factors may give clues to the individual's ability to mitigate consequences of injury, acquire necessary environmental modifications, and maintain economic self-sufficiency.

Diller L, Fordyce W, Jacobs D, Brown M: **Rehabilitation indicators project overview and forms.** New York: NYU Medical Center, Rehabilitation Indicators Project, 1979.

The 1970's witnessed the growth of several trends in rehabilitation that provided impetus for the development of *Rehabilitation Indicators*. Consumers demanded more accountability, programs aimed at independent living expanded, and other factors, such as increased cross-

disciplinary interactions and multifaceted rehabilitation services provided over extended periods of time, pointed to a need for better coordination and communication.

The Rehabilitation Indicators (RI) project began its work in October 1974. RI, regarded as a nontraditional method of functional assessment, refers to a general information gathering and organizing approach, as well as to specific tools and methods. It is intended to improve outcome measurement and communication and to simultaneously facilitate client-counselor interactions.

RI's consist of descriptions of client functioning, focusing on observable elements that are relevant to the rehabilitation process. These indicators are organized into four sets: status, activity patterns, skills, and environment. *Status Indicators* are viewed as categories of client behavior, and broadly summarize vital areas of behavior, such as "being unemployed." Thus, they provide information that is relevant to a client's individualized program planning and to an assessment of outcomes.

RI's can contribute to the rehabilitation process by assisting clients and professionals with decision making at every stage. They can provide valuable information defining needs for rehabilitation services, specific goals, and intermediate objectives.

The RI assessment instrument is currently available for limited use only. Rehabilitation settings must meet certain criteria before permission to use it will be granted. The instrument contains client data sheets and sample interviews.

Dudek RA, Ayoub MM, Powers RF, Sigelman CK, Martin AS, Bensberg GJ, Burns JR, Marcy WM, Brewer CW, Lyle CE: **Human Rehabilitation Techniques: A Technology Assessment.** (vol. 1, pt. A). (NTIS No. PB-277 276). Lubbock, TX: Texas Tech University, 1977.

This is the first of a six-volume report on the findings of an intensive research effort aimed at identifying policy-related aspects of efforts to aid disabled persons in the U.S. Its overall objective is to provide a basis for informed policy-making by both citizens and public officials.

The methodology includes the use of data base information about disability, rehabilitation technology, and related characteristics of U.S. society. Fourteen representative disabilities are discussed in detail to derive functionally defined common factors in their limitation of life functioning. The authors caution, however, that

much is not yet known and that within any disability group there are pronounced individual differences.

Existing technology is then related to the needs of disabled persons by classifying it within each of the 14 specific disability groups according to the life function needs it meets, as well as according to the mode of application it represents. This dual classification scheme is useful, particularly when assessing the need for new developments in technology.

This interaction between life function needs of the disabled and the use of technologies, forming as it does a rehabilitation subsystem of U.S. society, is then viewed in the context of its interaction with other major factors in American society. This relationship is then projected through the year 2025 under three different sets of socio-economic conditions representing limited, moderate, and high national growth rates.

In conclusion, the authors discuss several problems that exist, a major one being the lack of adequate standardized data to define disability and related problems. Objective policy decisions at all levels are thus rendered extremely difficult.

Granger CV: Health accounting: **Functional assessment of the long-term patient.** In: *Krusen's Handbook of Physical Medicine and Rehabilitation* (3rd edition), Kottke FJ, Stillwell GK, Lehmann JF (eds.). Philadelphia, PA: W.B. Saunders, 1982.

The author defines functional assessment as an extension beyond the traditional components of the medical record (i.e., history, physical examination, and laboratory data) to include information about the person's performance of tasks, fulfillment of social roles, and social supports. It is a framework for a review of those biological, psychological, physical, and social/environmental systems necessary for a satisfying quality of life. Such a method has gained in importance as chronic diseases have displaced infectious diseases as prime health problems.

The author discusses the desirable features of a functional assessment instrument, describes several instruments, and outlines purposes and uses of functional assessment in various settings.

The *Long Range Evaluation System* (LRES), a functional assessment system, is discussed at length. It is a measurement tool for describing areas of service need, severity of handicap, change in individuals over time, and for comparing the status of groups of individuals treated at different times and in different locations. The

LRES collects functional assessment data on a worksheet coded for computer entry.

Halpern AS, Fuhrer MJ (eds.): **Functional Assessment in Rehabilitation.** Baltimore, MD: Paul H. Brookes Publishing Company, 1984.

Rehabilitation professionals seeking a recent, comprehensive description and analysis of functional assessment focusing on vocational applications will find this book useful. The editors have brought together the work of researchers relating the history, instruments, and state-of-the-art approaches to assessment.

Contributors provide more evidence of the value of functional assessment in "identifying patient needs, choosing service interventions, monitoring responses to treatment, and evaluating outcomes for individuals or groups" while directly assessing the special circumstances of client groups with physical handicaps, developmental disabilities, psychiatric impairments, and communication disorders.

This information is largely the product of many years of research funding by the National Institute of Handicapped Research, and is one of first comprehensive products of work by researchers in providing practical and critically needed help in the vocational placement and independence of individuals with handicaps in the United States.

Indices, Inc.: **Functional limitations: A state of art review.** Falls Church, VA: Author, 1979.

This document discusses problems surrounding definitions of terms such as "impairment" and "severely handicapped" as they relate to the mandates of the Vocational Rehabilitation Act of 1973 (P.L. 93-112 as amended). The purpose of this publication is twofold: to examine progress in the development of functional indicators for vocational rehabilitation, and to determine future research needs about them.

The paper identifies the gaps in the present system of diagnostic labels and reports on recent research efforts in alternative disability measurement concepts. It emphasizes the "functional limitations" approach.

The report discusses the possible use and misuse of functional limitation instruments for vocational rehabilitation and includes a partial annotated bibliography on functional limitations, with reviews of several instruments currently used.

Jochheim K, Koch M, Mittelsten Scheid E, Schian H, Weinmann S: **Ability and requirement profiles aid for the vocational reintegration of the disabled** (2nd ed.). Wuppertal, Federal Republic of Germany: Gemeinnützige Stiftung ERTOMIS Bildungs und Forderungs, GmbH, 1984.

This expanded and revised assessment instrument provides a useful and easily interpreted profile of client abilities and job demands. The manual, translated into English, also traces the history of rehabilitation in Germany and describes the development of the ERTOMIS Profile.

The matching of client functional abilities and job requirements serves to identify the ways in which a client qualifies for specific jobs, showing both strengths and areas needing improvement, through services or environmental modifications, for successful placement.

The profiles are printed on two pages, one with client characteristics and the second with job requirements. One of these pages is a transparent overlay; when its grid is placed over that on the paper page, the tool allows direct comparison of the two matching scales as well as permitting some general indication of severity of deficits.

This concrete and essential information does not deal with medical diagnostic labels, but rather evaluates the effects of functional impairments on the ability to do work. While assisting rehabilitation specialists in matching functional abilities and job requirements, the profiles may also accentuate job placement efforts by providing evidence that addresses employer concerns about client skills and ability to fulfill job needs.

Studies of instrument validity have been performed with a population of mentally impaired clients, showing some evidence that mismatch of *Ability Profile and Requirement Profiles* for employed clients may predict loss of employment in that group.

Kaufert JM: **Functional ability indices: Measurement problems in assessing their validity.** *Arch Phys Med Rehabil* 64: 260-267, 1983.

Four confounding variables in validation of functional assessment instruments are identified. These include: (1) the impact of aids, adaptations, and helpers; (2) situation variations and motivational factors; (3) professional perspective of the rater; and (4) role expectations of the patient in performance of certain functions.

The author describes a study comparing questionnaire-based functional assessments and clinical assessments of

92 elderly primary-care patients' performance on 13 mobility and self-help functions.

Rater/questionnaire agreement was highest for more basic mobility and self-help functions when controlled for compensation by aids, adaptations, and helpers. Motivational factors and situational variation were minimized by primary-care team members reassessing subjects in their home environments. Systematic variation between questionnaire and clinical ratings reveal differences in clinical perspective between physicians and nurse raters. Differences in reported performance of male and female subjects indicate differing culturally determined role expectations regarding self-care.

Keith RA: **Functional assessment measures in medical rehabilitation: Current status.** *Arch Phys Med Rehabil* 65: 74-78, 1984.

Functional assessment has been developing without adequate study of underlying conceptual issues or properties of measurement, resulting in instruments without widespread utility for medical rehabilitation.

The author examines current developments in medical rehabilitation assessment, and calls for work to meet the need for standardized scales that measure those domains generally agreed to be important, and that "yield the discriminatory power that clinical practice and program evaluation require."

Lankhorst GJ: **Preliminary experiences with WHO's international classification of impairments, disabilities, and handicaps: A user's report.** Unpublished manuscript, Jan van Breeman Institute, Center for Rheumatology and Rehabilitation, Dr. Jan van Breemanstraat 2, 1056 AB Amsterdam, The Netherlands.

The ICIDH was introduced in 1983 to a Dutch outpatient rehabilitation department to test its effectiveness as a longitudinal assessment tool and as a policy-making aid for the Institute. After one year, 1,148 first-time referral patients with rheumatic disorders had been classified by their physicians.

The author found the impairment code useful for patients with locomotor disorders. While the concept of the disability code was stated to be sound, its practical use was made difficult by the "rigid numerical framework."

Difficulties were experienced in applying the disability codes; they were found to be time consuming to

administer, and there was concern about the category's reliability and validity in practice. In contrast, the handicap code was found to be very informative, allowing a useful profile to be created in 2 to 6 minutes. It was frequently used as an index of disability status rather than as an indicator of disadvantage, despite the original ICIDH intent.

Nagi SZ: Disability concepts and implications for programs. In: *Cross-National Rehabilitation Policies*, G.L. Albrecht (ed.). Beverly Hills, CA: Sage Publications, 1981.

The author emphasizes the importance of conceptual clarity in rehabilitation and differentiates four terms often used interchangeably: pathology, impairment, functional limitation, and disability.

Active pathology may be the result of infections, metabolic imbalances, degenerative disease processes, trauma, or other etiology, and is associated with the mobilization of bodily defenses and coping mechanisms. Impairment refers to abnormalities and residual losses remaining after active pathology is arrested or eliminated. Impairment may also result from nonpathological congenital deformities and from disuse of muscles or organs.

Functional limitations can occur at the level of molecules, cells, tissues, organs, systems, or the organism as a whole (for example, walking, climbing, lifting, vision, hearing) and correspond to what is generally referred to as "handicap."

Disability refers to social functioning. It is a form of inability or limitation in performing roles and tasks expected of an individual, such as self-care or employment, within a social environment.

The author notes that not every impairment results in disability and that similar patterns of disability may result from different types of impairments and functional limitations on the organismic level. Furthermore, identical types of impairment and functional limitations with similar degrees of severity may result in different patterns of disability depending on both the reactions of the disabled person and the social definition of the situation. He also acknowledges that this conceptual scheme is difficult to apply to emotional and intellectual problems.

Several problems characterize the operational definitions and measures of disability in present programs. The most common problem is the confusion between disability and impairment.

Ogren EH, Lauricella JM: A first look at an employability index. *Aust Dis Rev* 2: 44-52, 1984.

The *Employability Index* is a tool to measure a client's ability to obtain and maintain a job, using categories from the *International Classification of Impairments, Disabilities and Handicaps (ICIDH)*. It seeks to 1) predict potential for employment and areas of individual need, 2) assist in program planning and evaluation of progress, and 3) include personal, social, and environmental variables.

The index transforms disability categories of the ICIDH from descriptions of limitations to descriptions of functional abilities, retaining the rating of functional severity (adequate, conditional, and inadequate).

Other assessed factors include job market conditions, and personal/environmental factors, such as general health, family attitude, housing, and transportation, any of which could compromise employability.

Rogers JC: Clinical reasoning: the ethics, science, and art (Eleanor Clarke Slagle lectureship—1983). *Am J Occup Ther* 37 (9): 601-616, 1983.

Occupational therapists (and other human service professionals) sometimes make important clinical recommendations intuitively, without having a clear notion of the many components of their decision-making. The author examines the clinical assessment process as a scientific multifunction approach to addressing client needs.

Assessment should focus on the strengths and competencies of the client as well as dysfunctions. Specific functional abilities should be identified and monitored through time to revise intervention strategies as necessary. Attention to both the physical and social environments as enablers of human performance is essential, while examining personal and vocational history gives indications of the client's values and skills for mastery of the environment.

The resulting model describes and explains the client's unique functioning, superimposing functional abilities on disabilities and relating these to environmental demands and to past performance. This comprehensive model allows prediction of future capacity and recommendation of appropriate treatment goals and strategies.

The clinician's role requires functioning as a scientist, ethicist, and artist. Each of these aspects are essential; without science, practice is not systematic; without ethics, it is not responsible; and without art, it is not convincing to the client.