SPECIAL REPORT

A MEDICAL SOCIAL WORK PERSPECTIVE ON REHABILITATION

Kerstin S. Fugl-Meyer, PhD

From the Department of Neurobiology, Care Sciences and Society, Division of Social Work, Karolinska Institutet and Department of Social Work, Karolinska University Hospital and Stockholms Sjukhem Foundation, Stockholm, Sweden

This paper introduces a biopsychosocial model for use as a tool by medical social workers and other rehabilitation professionals for the descriptive analysis of the case history and follow-up of patients needing rehabilitative support. The model is based on action theory and emphasizes the demands on evidence-based clarification of the interplay between a subject's contextual life situation, their ability to act in order to realize their goals, and their emotional adaptation. Using clinical experience and literature searches, a standard operations procedure to adequately document the case history in clinical practice is suggested, thus providing strategies through which the work of medical social workers can be based on evidence. Some specific areas of concern for the medical social worker within the rehabilitation of disabled people are highlighted.

Key words: social work; evidence-based healthcare; quality of life; disability evaluation; coping skills.

J Rehabil Med 2016; 48: 758-763

Correspondence address: Kerstin Fugl-Meyer, Karolinska Institutet, Department of Neurobiology, Care Science and Society Division of Social Work, Alfred Nobels allé 23, D3, SE-141 83 Huddinge, Sweden: E-mail: Kerstin.sjogren.fugl-meyer@ki.se

Accepted Aug 17, 2016; Epub ahead of print Sep 28, 2016

INTRODUCTION

The aim of this paper is to introduce, particularly for medical social workers (MSWs), a model for establishing valid social and psychosocial differential diagnostics in people with somatic ill-health, as a guide for choosing adequate intervention strategies and as an aid for establishing evidence-based clinical practice.

Social work has been described as the endeavour to enhance person/environmental fit by fostering the well-being of individuals, families, groups, organizations and communities (1). Within somatic healthcare, medical social work addresses social and psychosocial dimensions of disability in the achievement of goals, focusing in parallel on the individual, their significant others and society, in order to ensure optimal well-being.

This paper is based, to a considerable extent, on an action theory approach to health (2–4), whereby a person in good health is one who has, or trusts that they have, the psychophysiological capacity within their environment to act or

respond adequately in ways that support their goals and aspirations.

From an action theoretical perspective the person is regarded as a subject not an object, and the subject's understanding and evaluation of their action potential is essential for joint problem-solving by the individual and the rehabilitation team. Relevant interventions can aim either to support the person to modify their personal repertoire of abilities to reach pre-morbid goals or to support the patient to realize other fully meaningful goals. In this context it should be acknowledged that the consequence of disease is often a problematically complex biopsychosocial interplay. This is discussed by Wade (5) in his new model for holistic healthcare. MSWs' knowledge of how to manage legal and other societal, as well as intrapersonal and interpersonal obstacles, can be decisive for the future social well-being of the patient and their significant others (6).

Progress is dependent on knowledge, knowledge is dependent on objective observation, and objective observation is dependent on accurate measurement (7). A wealth of clinical analytical studies has demonstrated that the integrated role of medical social work during and after the establishment of a medical diagnosis can encompass acute and rehabilitative interventions, and the value of social work in hospital care has been shown (8). However, regarding diagnosis and case history, medical social work, to a great extent, suffers from a lack of evidence-based practice, which is defined here in accordance with Sackett et al. (9) as: "the integration of best research evidence with clinical expertise and patient values". A review of the Cochrane database and social work journals, found very few studies that have reported evidence-basing investigations on the relative efficacy of medical social work. There are several possible explanations for this lack. Arguments for and against evidence-based social work practice have been discussed by Howard et al. (10). One main reason may be that, within the individualized, often complex, medical social work intervention process, doubt can be raised about the applicability of statistically (evidence-) based clinical research. Another primary reason may be that, within somatic healthcare systems, the patient may often be regarded bio-statistically as a symptom-bearer, ignoring their wishes to be a volitionally acting subject in their environment (5). Moreover, medical and social authorities can be quite sharply separated, with ensuing obstacles to communication across their borders. Here, the MSW's special competence to analyse and treat the patient in their environmental context will often

be a valuable, or even necessary, ingredient. Without properly research-based evidence it is difficult to validly demonstrate the rationales and possible efficacy of the MSW's work, resulting in underestimation of the role of the MSW in rehabilitation. A reasonable systematization of the case histories of patients in their biopsychosocial living conditions appears necessary to demonstrate the possible efficacy of medical social work. The model given here may serve to assist MSWs in doing so.

CASE MODEL

In medical social work within somatic healthcare, it is of decisive importance to choose optimal interventional strategies for those who need assistance. These should be based on a valid social and psychosocial diagnosis, related to the medical diagnosis of disease per se and its prognosis. The model for case history proposed here (Fig. 1) is the pro tempore result of my own nearly 30 years of clinical and research work (11, 12), within the spheres of rehabilitation and sexual medicine. It is largely anchored in action theory and intends to provide the professional with a tool to analyse the (holistic) situation of an individual. In this context it should be borne in mind that a model is simply a graphical representation of systematic thoughts. Whereas some readers may disagree with the model, I can appease them by agreeing with Descartes (13), in stating that it is not my ambition to teach the method everybody should use, but mainly to illustrate a way of thinking. This model does not disagree with the International Classification of Functioning, Disability and Health (ICF). Rather, it is compatible with and can be linked to it (14).

The CASE model (Fig. 1) contains 4 elements: context, action, subjective appraisal and emotion. The lines between these elements can be regarded as scripts that can be bidirectional (i.e. they can convey results further on, but also provide feedback for the deliberations at prior levels). The left-hand semi-circle characterizes the person who reports sufficient body function and psychological adaptation to act on their behalf to realize goals. Thus aspirations are met and satisfaction may ensue. In contrast, the right-hand semi-circle shows the impaired or psychologically maladapted person, who has insufficient activity repertoires to reach their goals, resulting in a relatively low level of subjective appraisal, ultimately often followed by low level of satisfaction. The main directions of interventions are shown. Due to the often multidimensional nature of MSWs' interventions, these will only fragmentarily be discussed here.

The model does not pretend to be mandatorily sequential, but should rather be seen as a map serving to direct attention towards possible issues to be focused on. The reversible arrows to/from levels of satisfaction serve to lock the model neither to top-down nor to bottom-up causal speculations. In the case of rehabilitation care it might be reasonable to fit the model into a loss framework whether or not the patient and significant others compare their personal situation with that of other people.

CONTEXT

From a rehabilitation medicine theoretical perspective, van Dijk (15) identified obligatory relations between: (i) the body, including the brain as a biological system; (ii) the psyche, an individual's system of interpretation of their position in the environment and their source of activity for their biological system, and (iii) the environment that influences and is influenced by the individual. In these terms, which I shall follow here, the context level denotes the circumstance that facilitates or inhibits intentional activity repertoires needed for realization of their goal(s). Within the contextual framework, (i) and (ii)

characterize the intrinsic, while (iii) characterizes the extrinsic life chances of an individual.

Function vs Impairment

Function denotes a person's normalizable anatomical-physiological capacity, defined bio-statistically according to Boorse (16) as organ-level function according to design. Impairment (right-hand semi-circle, Fig 1), which to Boorse appears to be synonymous with illness, signifies lower than statistically expected normal function, admittedly a fairly mechanistic point of view. Impairments can be inborn or acquired during different stages of the life-cycle with or without further progression. Impairments will often, but certainly not necessarily, result in unwanted limitations or lack of activity repertoires. Function/impairment can, for convenience, be categorized into these, often concurrent, categories: energy production, sensing (including pain), mobility and cerebral integration.

As mentioned above, functions are a prerequisite for activities, while impairments can give rise to limitations of societal participation to achieve vital goals. Hence, the MSW should have reasonable knowledge concerning symptoms and signs, prognosis and treatment. The MSW is, however, just one member of the rehabilitation team. Obviously the MSW has a minor role, if any, in the understanding and treatment of impairments *per se*; but without adequate knowledge about these conditions and their prognosis, social and psychosocial intervention strategies are, generally speaking, impossible to establish. Furthermore, such knowledge is important for enabling communication between the MSW and other staff members, the patient and their significant others.

Adaptation vs Maladaptation

While impairments may best be regarded as time-dependent classes of specific circumstances, Adaptation (left-hand semicircle, Fig. 1) vs *Maladaptation* characterize the intrinsic psychological life chances of an individual. To be adapted means that the person is in harmony with themself within their environment, while adaptation signifies a person's being or process of becoming adapted. Almost half a century ago, Bowlby (17)



Fig. 1. The model for CASE history.

stated that successful adaptation resources require a specific goal and an environment that facilitates goal achievement. Adaptation is dependent upon pre-impairment psychiatric/psychological position and on the patient's coping resources. At the time the medical diagnosis and its prognosis is brought into consciousness, different adaptive psychological reactions often occur for the patient and those close to them. In order to avoid maladaptive consequences, very early and occasionally long-lasting interventions, including psychotherapy, directed towards meeting the needs of a patient and their significant others may be indicated. Here, the broad psychosocial knowledge of the MSW can be invaluable in establishing optimal adaptation.

In the early years of the 20th century, Freud (18) characterized mourning as a response to loss, where the world becomes miserable and empty, while additionally in melancholia the ego itself is poor and empty. In a medical context, Olsson (19) stated that mourning elicited around the loss of a close one who has died in a coronary care unit can lead to deviation from the desired personal cause of life. To avoid maladaptation, the mourning subject primarily needs emotional support as opposed to informational intervention. MSWs should be aware of this need for emotional support and interaction specific to the bereavement process. As emphasized by Olsson (19), the MSW can here have an important role for close relatives and for rehabilitation. However, respect for the variability of bereavement must be a main concern for proper psychological treatment.

Coping has classically been defined as: "constantly changing cognitive and behavioural efforts to manage specific internal and/or external demands that are appraised as taxing or exceeding the resources of the person" (20). In particular, progressive impairments, such as cancer, rheumatoid conditions and neurological conditions where the prognosis is uncertain, are taxing for a patient's adaptation/coping capacity and place serious demands on the MSW's intervention repertoires. The literature pertaining to medical social work includes an impressive wealth of empirical, often qualitative, studies where different ideas of coping and adaptation are marketed. It would be beyond the focus of the present essay to attempt to survey this literature. However, Illich (21) suggested in his critique of medicalization that health is an everyday word for the intensity with which individuals cope with their internal status and their environmental conditions. Some years later, Antonovsky (22), in terms of comprehensibility, manageability and meaningfulness, discussed the general resistance available for coping with stressors. His salutogenic scale (sense of coherence; SOC) has been a widely used instrument within medical social work and has, in a meta-analysis, been demonstrated to be valid (23). Both a strong sense of coherence and a qualitatively sufficient social network buffer a possibly negative effect of a major physical trauma on the level of anxiety and on several aspects of life satisfaction (24).

Environment

The liveability (25) of the environment constitutes the extrinsic life chances of a person. Environmental circumstances include

a multitude of demographic factors, such as gender, age, ecological, cultural, financial, social and legal situations, family size and number of dependent and dependable significant others. In clinical care it has to be recognized that socio-economic imbalance exists where low income, poverty and ill-health are closely associated (6). Differences in health can be explained by the (socio-economic) environment, such as opportunities for education and work, welfare and health services, shelter and safety. Thus, available resources supporting health must be acknowledged and MSWs must promote social inclusion and patient empowerment. Moreover, the actions of MSWs need to go beyond the individual's problem(s); attention to possible discrimination, stigmatization and violence should be assessed. It is important to highlight differences and inequalities in health through discussions in the rehabilitation team, as social barriers are often as important as physical barriers (6). To ensure quality and liveability for the patient, a key object is, where appropriate, to provide active support in legal and other societal matters; but it is also important to obtain a grasp of the patient's religious and cultural values and experiences. Thus, rehabilitative social work is firmly located in biological, social, economic and political circumstances (6, 26).

ACTION

Almost 2,500 years ago, Aristotle (27) stated that being active is the essence of living. This essay regards people as wanting to be active subjects within their field of action. Intentional activities are chosen by the individual and are performed within occupational roles; many, but not all, of those are freely and intrinsically chosen by the individual. An exception in many cases is the routine jobs of home maintenance. The concept of occupational role preferences has long been a central feature of occupational therapy and, in statistical analysis, has been stratified into family, leisure and provider roles (28). Within this concept the subject's circumstances can be understood as the field of action in which they intentionally interact with their environments, be they physical, social, cultural or spiritual. A central feature is that the individual interacts with themself in order to realize their goals.

To act is to choose. From very early infancy, actions are either explorative (i.e. aiming at change to reach new goals or to achieve previous goals in a new way) or confirmative (reaching goals using established abilities that are well-known to the subject). To act, the subject chooses from their repertoire of abilities those that they deem appropriate for realizing their goals. Hence, intentional activities to achieve vital goals are personal characteristics (each person has learned their own patterns of actions), from daily tooth-brushing to complex interactions with significant others and social authorities. Everybody develops their own skills by performing explorative actions, the bulk of which later become confirmative. However, with an acquired impairment, and depending on the severity of the impairment, perceived or manifest disability (right-hand semicircle, Fig. 1) may prevail. Under such circumstances many, if not all, well-established actions become explorative; that is,

actions become new again, and the patient is unsure of their outcome, a taxing situation that will frequently demand close co-operation between nursing staff, physiotherapists, occupational therapists and MSWs in order to minimize difficulties. For optimal ability, it is imperative that professionals work together to support the action potential of the patient, and to ensure that they do not experience this as creating distress. The patient should, if necessary, learn either to explore new ways to reach previous activity goals or to reorient themself toward new, meaningful activities within their occupational role, thus eliminating or minimizing the burden of experienced disability and promoting social well-being. This process can necessitate long follow-ups by MSWs, stretching into the time when the patient is in their home environment; a fact that underlines the need for appropriate transferral from specialized rehabilitation units to primary care and to the patient's future domicile.

Work has been thought to be probably the most important among all human actions. It is hardly surprising that a key concept in the basic education and later practice of MSWs is to support an active, financially reasonable provider role for those patients in vocationally active (including studying) years. Unemployment has been described in a multitude of publications as a struggle against demoralization and anomie. It is too far outside the present topic to refer to the wealth of literature in this domain. People who, due to impairment, have lost their confirmative activities within the provider role, have been reported by several authors to experience fatal losses in intrinsic job satisfaction, with ensuing reduction in financial domainspecific and overall life satisfaction/happiness. A primary professional endeavour of the MSW, constituting a role that is unique in somatic healthcare, can be to ensure that a disabled subject can preserve their self-esteem and actualization as a (future) provider. Hence, it is of paramount importance to penetrate the meaning of work for impaired patients and to support them in negotiations with legal and, if applicable, union staff and employers or representatives of job-replacement and educational institutions. Finally, it is important for state finances to avoid the costs of impairment compensation. For those who cannot return to work, a top priority of the MSW should be to co-operate with social security agencies and other insurance institutions to secure proper financial benefits.

SUBJECTIVE APPRAISAL

In clinical practice as well as in research it is of the utmost importance to observe and to keep the subjective appraisal of the performance and results of an activity separate from the action *per se*. Subjective appraisal circumscribes the extent to which an individual has confidence in their abilities and skills to perform an activity. In the left-hand semi-circle the person who has adequate circumstances (function and adaptation) perceives that aspirations for an action are met by achievement. By contrast (right-hand semi-circle), if the activity does not result in the desired success, or only with unwanted or unexpected difficulties, they will perceive an aspirations/ achievement gap, ordinarily accompanied by problems or even

distress. Without due attention to how the individual patient perceives the execution and results of their actions, interventions to optimize their life situation will be futile or, at best, insufficient. As suggested by Lyubomirsky (29), theories that single out aspirations, goals, social comparisons and coping responses are intimately connected with psychological processes moderating the impact of the environment on well-being, by forging reactive subject-environment influence.

Sexual aspirations, procreative as well as recreative, are driving forces in human life. Sexual disabilities (incapacity to reach personal sexual goals), based either on adaptational limitations or on impairment of sexual function per se, are common in the general population (30), existing in nearly half of adult women and in more than a quarter of men. Sexual disabilities (here, the perceived inadequacy to act) can be contingent on an unsuccessful partner relationship or on other psychosocial disturbances, and have a heavy negative influence on satisfaction with life as a whole. Experiences of aspirationsachievement gaps in sexual life are, to a significant degree, shared within a partner relationship (31). Sexual disabilities are much more common in chronic conditions. Several serious risk factors for limitations or loss of sexual activity repertoires exist. Among these, cardiological-vascular, endocrinological and neurological conditions are common, requiring adequate information for the patient, and if necessary medical attention.

A sexual aspirations-achievement gap is closely linked to a relatively low level of sexual satisfaction and thereby to a low level of satisfaction with life as a whole. Sexual inadequacy in people with impairment is widely neglected in somatic healthcare education and praxis, although it should be taken seriously and in many cases be a matter for the MSW to deal with. However, the nature of the sexual aspirations-achievement gap must be analysed and, if necessary, treated. Some cases of sexual counselling may be rather simple, but qualitatively adequate management of psychogenic as well as organically caused sexual problems requires special knowledge and psychotherapeutic skills.

EMOTION

In a now classic, treatise Campbell et al. (32) found a direct connection between aspirations, achievement and life satisfaction. Accordingly, degrees of fulfilment of a subject's internalized roles are determinants of level of satisfaction. Philosophers, from a theoretical action perspective, suggested that health denotes a person's psycho-physiological capacity to act or respond adequately in their environmental context that supports their goals. From this point of view (2, 3, 4), the core of medical work can be defined biopsychosocially as optimization of patients' and their close ones' realization of goals, ultimately resulting in satisfaction with life as a whole; a synonym for happiness. I here deliberately avoid using the social construct quality of life (QoL), as without further qualification there appears to be no precise and consensual definition of this term. For instance, Veenhoven (25) maintained that QoL is circumstantially defined, referring in some instances to the quality of society and in others to its citizens. In any case,

as also stipulated by Veenhoven, sum scores of disparate factors make little sense. Furthermore, a great many more or less specific disease/health-related indices of QoL are available and some are misinterpreted in the literature (33). I suggest that health-related QoL scores may best be regarded as (biased) characteristics of perceived health status in terms of bother or distress.

In agreement with many authors, I regard the concept of satisfaction as characterizing effect; hence an emotion. Others have maintained that satisfaction is a social construct. Satisfaction may be domain-specific (i.e. relating to particular kinds of actions) or it may characterize life as a whole. When a person brings to consciousness their level of satisfaction from a life domain or from life as a whole, they relate hedonic effect to internalized roles; an assessment which von Wright (34) has termed "third person's hedonic effect".

Hence, self-reported level of life satisfaction characterizes the contentment that a person derives from a certain domain of life or from life as a whole, and can be interpreted as a social indicator. In this context it should be noted that level of overall life satisfaction/happiness varies considerably throughout the world, depending on socio-cultural circumstances. Thus, it is generally, on average, highest in north-western Europe and lowest in several African countries (35), and approximately 20% of individual overall life satisfaction is attributable to country characteristics. The remaining variation depends on personal characteristics (36). Individual level of overall life satisfaction/happiness varies over time, but is fairly constant in larger populations. Evidence-based studies of different kinds of domain-specific satisfaction are very sparse, particularly in people with disease and disability. In an investigation (37) of people with different neurological impairments, it was reported that, not only satisfaction with life as a whole, but also satisfaction with the domains of sexual life, activities of daily life, and leisure was lower than in a comparison group of unimpaired people. Overall life satisfaction/happiness is relatively higher in regions with better living conditions, making cross-national studies of this aspect somewhat difficult to interpret. There is, however, cross-sectional Swedish epidemiological evidence (38) that factors such as having a successful (including sexually) steady partner relationship, a positive job situation and not being an immigrant are facilitators of satisfaction.

The positive or negative contribution of domain-specific satisfaction to satisfaction with life as a whole depends upon the individual's structuring of domains (4), which is to say, each person weights their goals. Thus, in some instances and for some individuals, the level of domainspecific satisfaction may have a great impact on the level of overall happiness. For others, 1 particular level of aspirations/achievement may have minimal weight for overall level of life satisfaction. In the Swedish epidemiological investigation (38), it was found that in the general population the expressive role of closeness (satisfaction with sexual life, partner relationship and family life) is vastly dominant for satisfaction with life as a whole compared with being satisfied with experienced levels of the domains of health, leisure and providing.

CONCLUSION

This essay suggests a standard operations model to adequately penetrate in clinical practice the case history of actual subjects for MSWs. Taking for granted that the ultimate holistic goal of medical treatment is patients' optimal satisfaction with life activities and with life as a whole, the need for valid evidence-basing clinical research in medical social work is important in order to emphasize its integrated role in the treatment of impairment and maladaptation. An initial feature of such clinical research is to have a firm and reproducible grasp of the case history.

In an ongoing prospective study of stroke patients seen in rehabilitation, the model is being tested and evaluated. MSWs use the model for the assessment of patients and significant others, choice of treatment strategies, evaluation of the interprofessional communication within the rehabilitation team and patient satisfaction. By using data registered in medical journals, previous treatment strategies will serve as controls/references.

ACKNOWLEDGEMENTS

The author would like to extend special thanks to the late Professor Axel Fugl-Meyer for his critical insights and long-lasting, never-ending constructive discussions, and to Associate Professor Mariann Olsson for her valuable input and support.

REFERENCES

- Greene R. Redefining social work for the new millennium. J Human Behav Soc Environment 2005; 11: 37–54.
- Whitbeck CA. A theory of health. In: Caplan AL, Engelhart HT Jr, McCartney JJ, editors. Concepts of health and disease. Reading, MA: Addison-Wesley; 1981, p. 611–626.
- Pörn I. An equilibrium model of health. In: Nordenfeldt L, Lindahl B, editors. Health, disease and causal explanations in medicine. Dordrecht, Netherlands: Reidel; 1984, p. 3–9.
- 4. Nordenfelt L. On the nature of health: an action theoretic approach. Dordrecht, Netherlands: Reidel; 1987.
- Wade D. Rehabilitation a new approach. Part two: the underlying theories. Clin Rehabil 2015; 29: 1145–1154.
- Pockett R, Beddoe L. Social work in health care: an international perspective. Int Social Work 2015, p. 1–14.
- Gehmacher E. Let's learn happiness. In: Bormans L, editor. The world book of happiness. Tielt, Belgium: Lannoo; 2010, p. 29–33.
- Aurbach C, Mason S, Laporte HH. Evidence that supports the value of social work in hospitals. Social Work Health Care 2007; 44: 17–32.
- Sackett DL, Strauss SE, Richardson WS, Rosenberg W, Haynes RB. Evidence based medicine: how to practise and teach EBM. New York: Churchill Livingstone; 2000.
- Howard O, Himle J, Jenson JM, Vaughn MG. Revisioning social work clinical education: recent developments in relation to evidence-based practice. J Evidence-Based Soc Work 2009; 6: 256–273
- Sjogren K. Sexuality and leisure after stroke. With special reference to coping and rehabilitation. Dissertation. Umeå: Umeå University; 1982.
- 12. Fugl-Meyer AR, Fugl-Meyer KS. The coping process after trau-

- matic brain injury. Scand J Rehab Med 1988; 17 Suppl 2: 51–53.
- Descartes R. Discours de la methode (1637) part 1. Swedish translation by Marc-Wogau. Stockholm, Sweden: Natur och Kultur; 1990.
- Cemiauska M, Quintas R, Boldt C, Raggi A, Cieza A, Biekenbach JE, Leonardi M. Systematic literature review on ICF from 2001 to 2009: its use, implementation and operalisation. Disabil Rehabil 2011; 33: 281–309.
- van Dijk AJ. On rehabilitation medicine: a theory-oriented contribution to assessment of functioning and individual experience. Delft, Netherlands: Eburon; 2001.
- Boorse C. On the distinction between disease and illness. Philos of Publ Affairs 1975; 5: 49–68.
- 17. Bowlby J. Attachment and loss, vol. 1. London: Hogarth Press and the Institute of Psychoanalysis; 1969.
- Freud S. Mourning and melancholia. Standard edition of the works of Sigmund Freud, 14. London; Hogarth Press; 1917.
- Olsson M. Social support in bereavement crisis a study of interaction in crisis situations. Social Work Health Care 1997; 5: 117–130.
- Lazarus R, Folkman S. Stress, appraisal and coping. New York; Springer; 1984.
- 21. Illich I. Medical nemesis the expropriation of health. London: Random House, Pantheon Books; 1976.
- Antonovsky A. Unravelling the mystery of health. How people manage stress and stay well. San Francisco, CA: Jossey-Bank; 1987
- Eriksson M, Lindstrom B. Validity of Antonovsky's sense of coherence scale: a systematic review. J Epidemiol Community Health 2005; 59: 460–466.
- Anke AGW, Fugl-Meyer AR. Life satisfaction several years after severe multiple trauma: a retrospective investigation. Clin Rehabil 2003; 17: 431–441.
- Veenhoven R. The four qualities of life: ordering concepts and measures of the good life. J Happiness Stud 2000; 1: 1–39.

- Green D, McDermott F. Social work from inside and between complex systems: perspectives on person-in-environment for today's social work. Br J Social Work 2010; 40: 2414–2430.
- Bartlett RC, Collins SD. Aristotle's Nicomachean ethics: a new translation. Chicago, IL: University of Chicago Press, 2011.
- Branholm I-B, Fugl-Meyer AR. Occupational role preferences and life satisfaction. Occup Therapy J Res 1992; 12: 159–170.
- Lyubomirsky S. Why are some people happier than others? The role of cognitive and motivational processes in well-being. Amer Psychol 2001; 56: 239–249.
- Lewis RW, Fugl-Meyer KS, Corona G, Hayes RD, Laumann EO, Moreira ED, et al. Definitions/epidemiology/risk factors for sexual dysfunction. J Sex Med 2010; 7: 1598–1607.
- Fugl-Meyer KS, Fugl-Meyer AR. Sexual disabilities are not singularities. Int J Impot Res 2002; 14: 487–493.
- 32. Campbell A, Converse PE, Rodgers WL. The quality of American life. New York: Russsell Sage Foundation; 1976.
- Geyh S, Fellinghauer BA, Kirchberger I, Post MW. Cross-cultural validation of four quality of life scales in persons with spinal cord injury. Health Qual Life Outcomes 2010; 8: 94–120.
- von Wright GH. The varieties of goodness. London: Routledge and Kegan Paul; 1963.
- 35. Veenhoven R. World database of happiness. Available from: http://worlddatabaseof happiness.eur.nl.
- Bonini AN. Cross-national variation in individual life satisfaction: effects of national wealth, human development and environmental conditions. Soc Indic Res 2008; 87: 223–236.
- Branholm I-B, Lundmark P, Mansson M, Fugl-Meyer AR. On life satisfaction in subjects with neurological disorders. Neurol Rehabil 1996; 2: 63–67.
- 38. Fugl-Meyer AR, Melin R, Fugl-Meyer KS. Life satisfaction in 18-to 64-year-old Swedes: In relation to gender, age, partner and immigrant status. J Rehabil Med 2002; 34: 239–246.