·Special Paper·

Transforming Role of Rehabilitation Psychologists: New Paradigm, Challenges, and Directions

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Rehabilitation is an integrated program of interventions that support individuals with disabilities and chronic health conditions to attain "personally fulfilling, socially meaningful, and functionally effective interaction" in their daily lives[1—2].

The earliest attempts to provide "scientific" treatments for impairments such as deafness and epilepsy originated in the Greek and Roman period [3], although the same period was also notorious for the infanticide of children deemed to be "weakly" or "sickly"[4]. In the late 19th century, the first rehabilitation facility, the Cleveland Rehabilitation Center, was established in Cleveland, Ohio. It served as the model for other centers by providing restorative treatment for individuals with disabilities. During the same period, Thomas Gallaudet and Dorothea Dix became pioneers in advocating services for people with disabilities. Gallaudet established the first asylum to teach individuals with hearing disabilities how to communicate. Dorothea Dix campaigned to humanize the treatment of persons with mental illness and exerted great influence on state and federal funding for improvements in mental health facilities[5].

The First World War had a great impact on rehabilitation services, as it resulted in a large number of individuals with physical disabilities. Legislation was passed to help returning soldiers prepare for civilian life and to provide vocational rehabilitation programs for veterans with disabilities. Such legislation was later extended to provide services for civilians with disabilities. During the Second World War, the labor shortages resulting from military demands were helpful in establishing the competency of the disabled persons' labor force. Shortly after the war, the 1950s marked the beginning of the golden era of rehabilitation[6]. A number of laws and amendments improved the welfare and services for persons with disabilities. And in 1958, rehabilitation psychology was formally established as a division of the American Psychological Association (Division 22).

1 Toward an integrated biopsychosocial model of disabilities

The World Health Organization [7] has estimated that around 10 percent of the world's population, or an estimated 650 million people, live with a disability. The most common disabilities are associated with chronic conditions, injuries, mental illness, malnutrition, HIV/AIDS, and other infectious diseases. As this figure continues to grow due to population growth, medical advances, and the ageing process, the changing rate of disability is striking and presents formidable challenges in terms of ever-escalating health care costs[8].

In 2001, the World Health Organization [9] endorsed a new definition of disability: "an outcome of the interaction between a person with an impairment and the environmental and attitudinal barriers that he/she faces." The new definition suggests a paradigm shift from the traditional medical model to an integrated biopsychosocial model of human functioning and disability. The traditional model emphasizes the individual deficiencies of the disabled person, directly caused by disease, trauma, or other health conditions. The biopsychosocial model reconceptualizes disability as a sociopolitical issue, pinpointing the environmental factors (e.g., physical, environment, attitudes, services, and policies) that facilitate or restrict a person's potential to participate in daily life. The new model also "mainstreams" the experience of disability and acknowledges it as an universal human experience. Disability does not only happen to a minority of humanity; every person may undergo a decrement in health during his/her lifespan and experience some disability. Such a paradigm shift has an impact on attitudes toward disabilities and the formulation of public policy.

In North America, rehabilitation psychology, which has its roots in clinical psychology, has focused on treating individuals with disabilities. At its inception, rehabilitation psychology covered many areas of health care, treating people suffering from chronic conditions as well as from disabilities. However, soon after the development of new clinical specialties, including health psychology and neuropsychology, both of which overlapped with the broad domain of rehabilitation psychology, the role of rehabilitation

DOI:10.3969/j.issn.1001-1242.2010.04.001

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psychologists was redefined. This led to a narrowing of the definition of rehabilitation psychologists to focus on only one aspect of the field: the provision of psychological services to individuals with acquired disability. In other words, the reformulation of rehabilitation psychology moved away from the equally important aspect of caring for individuals with chronic disorders, many of which lead to disabling conditions. This transition changed the focus of rehabilitation psychologists from serving individuals with an array of chronic conditions associated with functional impairment from any source, to serving only those with acquired disability.

Frank and Elliott[10] called for rehabilitation psychologists to redirect the focus of their profession in order to address the needs of individuals with chronic conditions and disabilities. Throughout the 20th century, there was an increasing recognition that chronic conditions were replacing infectious diseases as the main threat to health [11]. Worldwide, chronic diseases account for the deaths of approximately 30 million people[12]. By focusing on chronic health conditions, rehabilitation psychology emphasizes the role of psychologists as providers of primary psychological services in a sector of the health care system that is developing rapidly. As chronic care systems are the least developed aspect of managed-care systems, many opportunities remain in this sector. A return to the historical roots of rehabilitation psychology requires a large-scale effort by the field's leaders, practitioners, and educators. If rehabilitation psychology can revert back to the broader concept of the care of patients with chronic conditions while capitalizing on the emergence of organized delivery systems and primary care systems, then the field can enjoy much stronger development.

The relentless economic forces that affect the health care delivery system are also exerting a profound impact on the practice of rehabilitation psychology, forcing the curtailment of some services and the redirection or relocation of others, and are prompting practitioners to be innovative when applying existing skills. According to Mash and Hunsley [13], for practicing psychologists, the majority of the diagnostic, assessment, and intervention activities in the health care system are likely to be time-limited and focused on targeted problems areas. There will be less emphasis on psychopathology and psychiatric diagnosis and more emphasis on assessment procedures that are directly relevant to designing and evaluating effective prevention and intervention strategies. Therefore, the practice of rehabilitation psychology must be more focused and responsive to the expectations of customers, both internal and external (internal customers include physicians, nurses, and allied health professionals; the term "external customers" is often used to refer to case managers, insurance companies, attorneys, and other hospitals, agencies, or practitioners in the community). This is particularly important considering the timeliness, relevance, and utility of assessment information and treatment interventions. Rehabilitation psychology must demonstrate the relevance of its clinical services to important outcomes or risks. With the shift to non-hospital settings, rehabilitation psychologists must redefine models of treatment to include home care and "telepsychology," practice guidelines and critical paths, the involvement of paraprofessionals, case management, injury prevention, and health promotion[14].

2 Attitudes toward people with disabilities

Another major challenge for rehabilitation psychology is the overcoming of attitudinal barriers in interactions and relationships with disabled persons that hinder their full integration into the community. Toward this end, rehabilitation psychologists draw resources from research efforts in two areas, namely attitudes toward people with disabilities and the psychosocial integration of people with disabilities.

Attitude is defined as an "enduring pattern of evaluative responses toward a person, object or issue" [15] comprising three components: cognition, affect, and behavior[16]. To modify negative attitudes toward people with disabilities, Lee[17] proposed that the first step is to start with the belief systems (i.e., to provide accurate information about disabilities and to discourage the spread phenomenon of stigmatization). Accurate information and positive contacts with people with disabilities are well-researched strategies to counter negative attitudes. Recent research has also explored other strategies, including media and reading interventions, protests and legislation.

Information programs could help promote positive attitude changes. Even brief courses on mental illness and treatment could lead to improved attitudes about persons with mental illness[18—19]. A two-semester academic curriculum on rehabilitation could induce a significant positive attitudinal change among occupational therapy students prior to them coming into contact with people with disabilities[20]. The information provided could include specific information, such as how to guide a blind person, or broader information concerning the ways in which disabled people define their situation and their substantial achievements within the growing disability movement. Penn DL, Guynan K and Daily T [21] noted that different kinds of information have different effects on attitudes: information about psychotic symptoms leads to a significant increase in negative attitudes about schizophrenia, whereas information about aftercare plans reduce negative judgments.

Contact with disabled people is important in promoting positive attitude change[22—23].The contact hypothesis[24] proposes that, under appropriate conditions, contact with persons from a disliked group leads to the growth of liking and respect

for, or at least to decreased prejudice toward, that out-group. Simple contact, or contact on a professional level, does not appear to be enough to bring about such change[25], as these interactions tend to focus on the problems, deficiencies, and distress of the disabled person rather than on positive aspects[23]. A meta-analysis study[26] revealed that providing contact with persons with mental illness is linked to improved attitudes, with the best results for contacts provided in the context of undergraduate training. Factors that may contribute to positive attitudinal change include equal status among participants, cooperative interaction, institutional support for contact, a high level of intimacy, and real-world opportunities to interact with minority group members outside of contrived situations [27—28]. Studies have shown that the combined effect of accurate information and increased positive interaction with people with disabilities tends to produce the most positive effects on attitude modification[29].

Media and reading interventions use an engaging narrative rather than an informational style to encourage perspective taking and empathy [30] and induce attitudinal changes. Positive results have been reported from experiments in which children in pre-kindergarten through to high school classes were randomly assigned to read stories about different minorities groups, including disabled people[31]. Cameron and Rutland[32], for instance, randomly assigned 253 five- to eleven-year-old English school children to listen to a story about a nondisabled child's close friendship with a disabled child; a group discussion led by the experimenter was included at the end of the story. This type of vicarious experiences of cross-group friendship reported positive attitudinal effects.

Advocacy and service groups for people with disabilities sometimes protest against media representations to counter stigma about disabilities. While these protests may reduce the frequency of publicly endorsed stereotypes, there is little empirical research on the psychological impact of such protest campaigns [28]. Scheid's study [33] found that employers who express coercive (fear of a lawsuit) rather than normative (belief that it is the right thing to do) rationales for employing disabled persons were more likely to hold onto stigmatized attitudes. As such, protests and legal measures may merely encourage the suppression of unwanted stereotypic thoughts. Such suppression requires considerable effort, and persons who are busy inhibiting negative attitudes often lack the cognitive resources to learn new information that may contradict the stereotypes[34].

3 Psychosocial integration of peopled with disabilities

Attitudes toward people with disabilities have a significant impact on the psychosocial integration of these individuals and can be analyzed in terms of three distinct, but interacting, social circles [16]. The innermost circle comprises of the individual's relatives, friends, and peers; their attitudes influence the development of the disabled individual's self-concept as well as the socialization of that individual into typical community activities. The next circle includes health and rehabilitation professionals and educators, including physicians, social workers, psychologists, and teachers, who are providers of information, services, and stability; their attitudes have an enormous influence on the rehabilitation processes and the attitudes of members of the other two circles. The outermost circle is the general public, who may display their negative attitudes toward disabled persons in media stereotypes, prejudicial beliefs, or a lack of caring about the well-being of the disabled persons. Their attitudes could create obstacles for disabled persons in role fulfillment and attainment of life goals.

Prejudice and stigma could affect the psychosocial adjustments and achievements of the stigmatized group in four ways[35]: (a) negative treatment and direct discrimination, (b) expectancy confirmation processes, (c) automatic stereotypic activation, and (d) identity threat processes. Negative treatment and direct discrimination directly affects the social status, psychological well-being, and physical health of the disabled persons. Expectancy confirmation processes suggest that perceivers' negative stereotypes and expectations can lead them to behave toward the stigmatized targets in ways that prompt them to react according to these initial, erroneous expectations. The stigmatized group tends to internalize much of society's attitudes and reactions, the automatic activation of negative in-group stereotypes harms their performance. When cultural knowledge and situational cues suggest that one's group is devalued, marginalized, and of low status, the stigmatized group encounters social identity threat [36]. For people with mental illness, their perceptions of stigma are strong predictors of their low self-esteem and depressive symptoms at six and 24 months follow-ups [37]. In another research, merely revealing their history of mental illness prompted the participants to perform worse on an intellectual test than those who did not reveal it[38].

Apart from overt negative attitudes and discrimination, Wright[39] also distinguishes two conceptual frameworks on the perception of disabilities. The succumbing framework highlights the negative impact of disablement and disabilities as pitiful and tragic, whereas the coping framework perceives people with disabilities as having an active role to play in their own lives and in the community. Wright [39] criticized some health care messages and fundraising campaigns for tending to focus on the succumbing framework (i.e., the suffering, sadness, dependency, and passivity of individuals with disabilities). Such campaigns minimize the coping possibilities and active participation of the individual, and may adversely affect societal attitudes toward illness and

disability.

To modify societal attitudes toward disabilities, rehabilitation psychologists should maintain a high profile in the community and proactively engage in public education campaigns and health intervention programs. To enhance positive attitudinal change among business people, rehabilitation psychologists should further develop their role in student education and primary care. In university education, rehabilitation psychologists are in a position to advocate the inclusion of different knowledge contents, geared toward providing information about, and opportunities for contact with, people with disabilities into the business curriculum [17,40—41]. Perhaps these knowledge contents could be extended to all non-rehabilitation curricula[42]. Rehabilitation psychologists could also take a lead in outreaching to corporations and employers. The introduction of disability management and occupational health programs is a natural means of arousing interest and promoting effective attitudinal changes. At the policy-making level, psychologists play a primary role in delineating concepts and definitions, undertaking research, and disseminating results to promote discussion and influence decision-making among policymakers [43]. All of the above factors play a part in the development of rehabilitation psychology in modern society and in the field of competitive health care.

4 Geographical disparities in rehabilitation services

Geographical disparities in rehabilitation services for persons with disabilities could relate to economic factors and cultural values. In developing countries, poverty and disability are interlinked in a vicious circle of cause and effect. Ignorance within institutions and professional agencies aggravates impairment into permanent disability. Misconceptions or stereotypical images that explain disability as the result of divine will or evil deeds lead to exclusion and marginalization [44]. In developing countries, only two percent of people with disabilities have access to rehabilitation and appropriate basic services [45]. The unemployment rate among disabled people is very high, reaching 85 percent in Tunisia and 99 percent in Zimbabwe[46].

Stages of economic development could be a factor that affects treatments for persons with disabilities. Finkelstein[47] argued that disability is an outcome of industrialization. With the advent of the Industrial Revolution in the 19th century, disabled people were excluded from mainstream society because they could not fit into the factory-based work system. In developing countries, a similar exclusion from the labor market has been emerging, but this change took place during the 20th, rather than the 19th, century. Economic reforms in China since the 1980s have also led to the marginalization of persons with disabilities, and employees who became disabled due to illness or accidents are often prevented from returning to work, as their poor work functions could affect their co-workers' bonuses [48]. In contrast, disabled persons are not excluded from participation in agricultural activities. Today, in the rural communities of some developing countries, disabled people continue to participate in the economic life of the community and do not encounter high levels of discrimination [49]. However, the weakness of this approach is that the infanticide of children with disabilities also existed in pre-industrialized societies, such as in Greek and Roman times.

Cultural values also shape societal attitudes toward disabilities. Cross-cultural studies have shown that Asians, including the Chinese, have more negative attitudes toward people with disabilities than Westerners[50—52]. The concept of "face" is important to Chinese people in interpersonal and societal relationships: it represents social power and capital, a person's value in society, and a person's ability to negotiate social networks [53—55]. A study found that Chinese employers were more reluctant to employ people with HIV than American employers because associating with a person with HIV could lead to a loss of "face" and a devaluation of the public image of their company [51]. The same study found that most Chinese employers did not make reference to government laws or guidelines on hiring discrimination and had no prior contact with people with HIV. Thus, the cultural variations may also be partially explained by the limited public education efforts and social contacts with disabled persons in Chinese societies.

The importance of collectivism and interconnectedness in Asian countries also heightens concerns about social contagion [51]. Collectivism is characterized by the strong identification with the in-group and primacy of in-group goals. People with disabilities are viewed as a disgrace introduced to the in-group [41]. In India, family members of persons with mental illness experience courtesy stigma and become socially contaminated [56]. In China, healthcare workers found themselves stigmatized just because they care for people with HIV [57]. However, the intact Chinese family also constitutes a great resource for the development of community-based rehabilitation in China [48,58]. As lifelong interdependence between family members is emphasized in traditional values, families are the primary providers of care to people with disabilities in China.

Faced with challenges and economic constraints, rehabilitation professionals in developing countries have to collaborate closely with governmental agencies and actively involve people with disabilities in the development of rehabilitation services provision. The research community is called upon to engage in research that can be translated into evidence-based advocacy, policy, practice, and products [59]. The United Nations Convention on the Rights of Persons with Disabilities [60] also places an obligation on people in high-income countries to provide development

assistance to support low-income countries in putting the Convention into practice.

5 Rehabilitation psychology and the transforming role of rehabilitation psychologists

Rehabilitation psychology is the application of psychological constructs and principles to the care of individuals with disabilities and chronic health conditions in order to "maximize health and welfare, independence and choice, functional abilities, and social role participation"[2]. Over past decades, the profession has continued to evolve with the changing conceptualizations of disabilities and dynamics in the health care system.

The success of psychologists in the changing health care delivery system rests on a number of divergent factors. To succeed, psychologists must have a clear understanding of the underlying causes of change and an advanced ability to react to these causes. Trained as scientist-practitioners, rehabilitation psychologists are poised to engage in a broader range of activities that promote the health, welfare, and psychosocial integration of people with disabilities. On the individual level, the work of rehabilitation psychologists includes assessments and interventions that address the personal factors limiting the activities that persons with disabilities engage in and their level of participation. At the community level, there is an increasing demand for rehabilitation psychologists to assume a more active role in public education, policy development, and advocacy for persons with disabilities. To perform these tasks, rehabilitation psychologists draw resources from the wealth of knowledge accumulated in the diverse areas of social psychology, health psychology, clinical and counseling psychology, neuropsychology, and so on. With the advent of these changes, rehabilitation psychologists should also reflect upon their roles in interdisciplinary teams with regard to research, treatment planning, and the development and program evaluation of primary care services for persons with disabilities[61].

6 Assessment, intervention, and research

As disability affects multiple areas of a person's life, rehabilitation psychologists assist disabled persons in achieving their optimal rehabilitation goals via assessment, intervention, interdisciplinary collaboration, and research [2]. With the new paradigm of disabilities, as defined by World Health Organization [9], rehabilitation psychologists are challenged to incorporate models and theories that examine the social, political, cultural, and economic factors affecting disability into their clinical work, and to increase the participation of persons with disabilities in services planning[62] and rehabilitation research[63—64].

6.1 Assessment

All good treatment plans are founded upon a thorough assessment of a person's strengths and weaknesses. Therefore, a great deal of effort has been spent on developing and validating assessment instruments relevant to rehabilitation. Apart from the continued development of functional assessment techniques, the integration of neuroscience knowledge to provide reliable and valid cognitive assessment is a notable trend. Several studies have demonstrated theoretically meaningful links between specific cognitive deficits and aspects of behavior, symptomatology, and/or prognosis [65—66]. A necessary first step toward bridging cognitive neuroscience with a neuroscientifically informed psychosocial rehabilitation approach is the development or use of pre-existing measures that can assess constructs that are theoretically tied to both overt behavior and underlying biological processes. Another growing trend is a shift from static to dynamic assessment methods. Ever since the inception of rehabilitation psychology, neuropsychology has played an important role in a patient's interdisciplinary diagnosis and intervention. The incorporation of concepts derived from neuropsychology and neuroscience, and the need to implement diagnosis and rehabilitation techniques closely related to the patient's daily reality, have led to the development of dynamic neuropsychology, which involves applying the principles of brain-behavior relation studies to clinics, taking into consideration the various factors of each individual's particular context[67].

6.2 Intervention

The primary goal of rehabilitation interventions is to modify a patient's behavioral repertoire so that he or she can cope more effectively with life stressors. An additional goal is to modify the patient's environment (e.g., via family-based interventions) to reduce stress levels. The further goal of increasing skill levels has been met in a number of ways. Approaches to skills-training directly teach patients how to perform skills that are necessary for effective community functioning. In addition, behavioral and psychoeducational approaches continue to be the primary psychological intervention strategies used within the health care system. These methods of intervention have been shown to be effective with a vast range of somatic disorders and health-related problems [68]. Such interventions tend to be relatively short-term and focus on skill-building (e.g., self-care skills) and lifestyle and habit modification. Along with skills training and behavioral management, the continued integration of vocational services should lead to increasingly positive work outcomes.

A significant and growing trend is the increased use of computer-based activities. For example, some data have indicated that using a neuropsychological educational approach to rehabilitation [69], namely a computer-assisted training paradigm, in outpatient and chronic inpatient

settings was associated with an enjoyment of the training, cognitive improvement, and gains on independent measures of problem solving[70].

The new disability paradigm has also encouraged the increasing involvement of persons with disabilities in decision making and policy setting that affects their lives[62]. Peer advocacy and the participation of disabled persons in the development and implementation of service programs are examples of such involvement. For example, the Health Resource Center for Women with Disabilities at the Rehabilitation Institute of Chicago, Illinois is a professional–consumer partnership that evolved from a series of meetings between women with disabilities and a group of health and mental health professionals[71]. The center is co–directed by a rehabilitation physician and an administrative executive who is an advocate from the disabled women′s community. This kind of collaboration could lead to the empowerment of persons with disabilities and a reduced reliance on professional assistance[62].

6.3 Research

Another important area of development concerns conducting research, applying and acquiring research funding, and disseminating scientific data. Program evaluation, quality improvement programs, and outcome research are all becoming increasingly important because both the assessment and treatment of psychological disorders, including neuropsychological problems, will have to become measurable, empirical, functional, and documentable. The reimbursement community is focused more than ever on outcome analysis and is requesting data from rehabilitation facilities to support the efficacy of their interventions. In this connection, a number of standardized assessment and treatment protocols are available to facilitate the use of empirically validated procedures. With their scientist – practitioner training, rehabilitation psychologists should become key participants in the development and testing of outcome measures and the creation of assessment systems[61].

Some psychologists have called for the inclusion of the perspectives of persons with disabilities in the formulation of rehabilitation research [63—64]. Applied and basic research relating to rehabilitation and disability should focus on the critical needs of persons with disabilities, the impacts of disability on their lives, and the policies and services that will help them to meet their own needs[72].

7 Conclusion

The radical reform in the health care system has posed both opportunities and challenges to the field of rehabilitation psychology. The pressure placed upon psychology and the health care system is diverse. Reverting to the broader concept of the care of patients with chronic health conditions and disabilities could provide a catalyst for the stronger development of the profession. Rehabilitation psychologists must also demonstrate the relevance of their clinical services to important outcomes or risk being excluded as treatment providers. The task of integrating research and practice remains challenging. Increased collaboration among clinicians, researchers, patients and their families, advocacy groups, and political representatives may be necessary to produce changes in the health care delivery system. However, such changes are critical both to motivate clinicians to learn and deliver interventions in a wider range of locations and to improve the outcomes and quality of life for patients who need greater exposure to these effective interventions.

The new disability paradigm calls upon rehabilitation psychologists to take more active roles at both community and policy –making levels to address the attitudinal and societal barriers that restrict the full participation of persons with disabilities in mainstream society. To promote positive attitudinal change, psychologists should frequently engage in media communications and provide consultations for corporations and employers. Rehabilitation psychologists could exert their influence in education and training by providing information and contact opportunities with people with disabilities within the curriculum. They also have the potential to make significant contributions to public policy deliberations and to health care systems, as their behavioral and psychological expertise is critical to addressing many pressing problems in society effectively.

To succeed in the changing climate, rehabilitation psychologists must understand clearly the underlying causes of change and have an advanced ability to react, so as to carve out a unique role for themselves as primary care providers in the health care delivery system. To do so, rehabilitation psychologists should always maintain their role as scientist–practitioners,using research and clinical expertise to develop, advance, and apply knowledge to promote the welfare and quality of life for people with disabilities and chronic conditions.

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