Proceedings of the 08th International Conference on World Disability and Rehabilitation
Vol. 4, Issue 1, 2023, pp. 1-15
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ISSN 2513-2687 online
DOI: https://doi.org/10.17501/25132687.2023.4101

THE ACADEMIC STUDY OF REHABILITATION: PRIORITIZING UNIVERSITY CURRICULUM FOR THE PREPARATION OF PRACTITIONERS IN THE INTERNATIONAL FIELD

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Abstract

This conceptual paper expounds on the reflections from the author's plenary speech and addresses the educational underpinnings of the limitations in rehabilitation services globally, but particularly in the Global South. There are disparities in the availability of post-secondary training programs in graduate and undergraduate rehabilitation disciplines all over the world, as compared to the plethora of medical training programs within universities internationally. The World Health Organization's International Classification of Functioning, Disability, and Health (ICF) provides a framework that is a vital reminder of the intricate, interdisciplinary nature of disability interventions. These treatment interventions constitute collaborations between preventative, curative, and rehabilitative health professionals within in-patient and outpatient settings. Yet rehabilitation professionals such as occupational therapists, physical therapists, mental health counselors, and physiatrists are inadequate in number in many parts of the world – making it impossible to meet the global health needs of patients who would benefit from their services. Social, cultural, political, and institutional barriers to the proliferation of rehabilitation practitioners, as evidenced by the research literature from these parts of the world, are addressed. In particular, an argument is made for more entry-level rehabilitation clinicians that are trained at the undergraduate level because of their unique preparedness to meet a variety of patient needs competently and promptly. Some foundational principles, global rehabilitation services issues, and future research implications of undergraduate rehabilitation education program development internationally are discussed.

Keywords: university, curriculum, international, undergraduate rehabilitation education

Introduction

Rehabilitation is "a set of interventions designed to optimize functioning and reduce disability in individuals with health conditions in interaction with their environment" (World Health Organization, 2023). The field of rehabilitation is comprised of expert services and interventions that are provided to individuals who are transitioning out of the acute phases of their health conditions, into periods of

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general stability in their symptoms. Many rehabilitation services will coincide with the termination of hospital stays and pick up where physicians' and nurses' duties cease. The goals of rehabilitation constitute the facilitation of activities of daily living in the patients' lives, such as employment, school, recreation, self-care, and other meaningful and sustaining life activities (World Health Organization, 2023b). There are a variety of rehabilitation disciplines that promote holistic treatment, such as physio/physical therapy and occupational therapy. Additional types of rehabilitation programs, perhaps less often utilized globally, include but are not limited to vocational rehabilitation, mental health counseling, speech therapy, audiology, vision therapy, pulmonary rehabilitation, stroke rehabilitation, and substance abuse counseling (Abrahams et al., 2023; Bickton et al., 2022; Botha, 2021; Hashemi et al., 2017; Mavindidze et al., 2020; Pendse et al., 2019; Prvu Bettger et al., 2019). Although rehabilitation presents evidence-based approaches to patient re-integration into their daily routines, there are many parts of the world where these services are not valued, financially supported, advocated for, or made readily available. The purpose of this paper is to highlight reasons for these disparities. Most notably, there is a limited availability of post-secondary academic training programs for community-based rehabilitation disciplines, as compared to the plethora of medical training programs within universities around the world.

Rehabilitation Services Issues

The main issue at hand is that rehabilitation services needs continue to be insufficiently addressed around the world (WHO, 2023b). Medical professionals generally treat health conditions in their acute phases, while rehabilitation professionals treat health conditions stabilized in their chronic phases. Medical interventions lean toward curative approaches, reinforcing the medical model of disability, while rehabilitation interventions lean toward the restorative, notable of biopsychosocial frameworks of disability. Medical treatment is provided in inpatient settings and is institution-based, while rehabilitation treatment is generally provided in outpatient settings that are community-based. While there are exceptions to these rules, these inherent separations between medicine and rehabilitation enable the exclusion or hierarchy of one over the other.

However, the two fields should work in partnership – as is iterated in the WHO's International Classification of Functioning, Disability, and Health (ICF) framework, depicted in Figure 1. The ICF's purpose and structure involve an amalgamation of medical and rehabilitative programs and services that address all aspects of human functioning and disability – simultaneously and/or consecutively – and provide information that should inform country policies (WHO, 2002). The ICF identifies ways that a person's health condition limits their functional capacity to engage in activities (e.g., walking, seeing, grasping); or their ability to participate in certain environments, due to discrimination and other barriers (e.g., social, physical, environmental), a lack of assistive technology,

or a lack of accommodations (WHO, 2022). These limitations underlie treatment intervention needs and help to identify the necessary members of the clinical team. The WHO's intention was for a framework to be utilized and interpreted by medical and rehabilitation practitioners worldwide, yet issues related to a lack of resources (human and financial), and poor implementation of health policies limit the extent to which necessary wrap-around services are made available to people with disabilities in certain parts of the world (Vargus-Adams & Majnemer, 2014; WHO, 2023a).

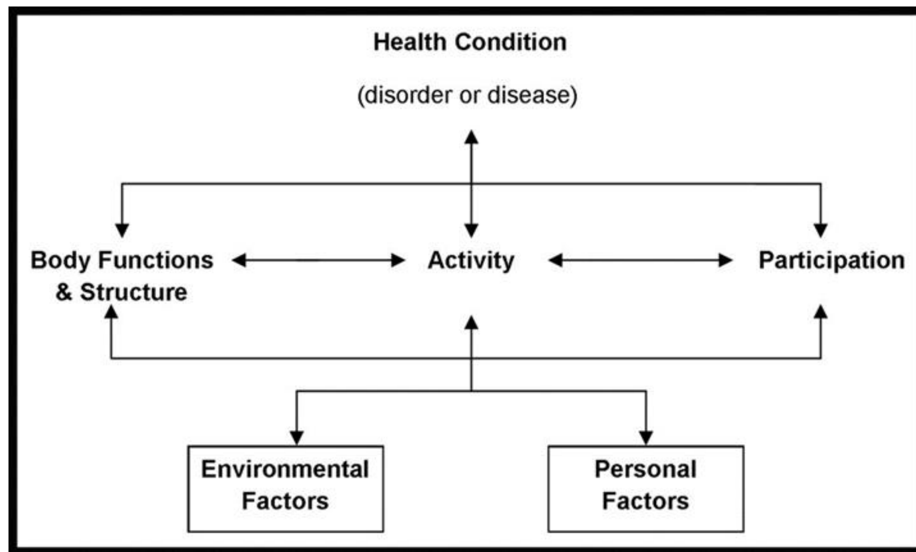

Figure 1: The representational diagram depicting the components of the WHO's International Classification of Functioning, Disability, and Health (ICF) framework for disability (World Health Organization Family of International Classifications Collaborating Centre in South Africa, 2013).

The field of physiatry, also known as Physical Medicine and Rehabilitation (PM&R) "is a medical specialty that involves restoring function for a person who has been disabled as a result of a disease, disorder, or injury" (Johns Hopkins Medicine, 2023). This specialty of medicine has historically been undervalued and deemed inferior to other medical specialities in some countries in the Global South (Arabi, 2021; Benjadid, 2019). Yet a physiatrist is a necessary and underutilized member of the clinical rehabilitation team. While medicine is a field recognized for its importance and is pervasive in every country, the specialization of PM&R is not, especially in under-resourced countries in the Global South where the disease burden is greater (Benjadid, 2019; Prvu Bettger et al., 2019). Th subjugation of PM&R within medicine, reiterates the minimization of rehabilitation in the family of health services.

Within countries in the Global North, physiatry training programs are limited compared to other specialities of medicine. In the United States, Morgenroth et al. (2023) proposed an increase in physiatry residency programs to help meet the PM&R shortage needs. Perret et al. (2018) discussed

the need for the growth of the field of physiatry and recommended a greater exposure of medical students to the specialty. Only about half of the medical students in the United States have the option of specializing in physiatry (Perret et al., 2018). As a result, a push for changes to undergraduate medical education as a way to initiate interest in physiatry earlier on in the academic careers of medical students was recommended. Negrini (2017) presented a comprehensive explanation for the seemingly single-minded focus of international health systems on curative and preventative health measures, which subsequently leaves little room for rehabilitation. Sociocultural foundations for the physiatrist shortage included widespread unfamiliarity with PM&R; a failure to appreciate the significance of physiatry in health settings, due to a tendency to focus on emergency medical conditions; its exclusion in the curriculum of undergraduate medical schools in many countries; and resistance to change (Negrini, 2017).

In May 2023, the World Health Assembly, a decision-making group within the WHO, backed an essential resolution that emphasized the importance of the integration of rehabilitation into health systems worldwide. The resolution was endorsed by 20 countries and called for the expansion of "rehabilitation in health systems as part of Universal Health Coverage" (WHO, 2023a). This action simultaneously acknowledges the need for rehabilitation in primary care services and as a component of emergency preparedness and response services (WHO, 2023a). Rehabilitation has long and rightly been viewed by rehabilitation professionals as the tertiary stage of complete healthcare provision (Vainker, 2021). The first, public health, is preventative; the second, medicine is curative; and the third, rehabilitation is restorative. The World Health Assembly's resolution embodies this. The assembly also recognized that this initiative would help to make rehabilitation available to more people globally, especially in light of the growing aging population worldwide.

As the number of individuals who need rehabilitation treatment services increases around the world, so does the geographic expanse within which they live. In other words, countries in the Global South have a great, pressing need for rehabilitation practitioners. But also, within these countries in the Global South is a need to reach patients in rural areas since treatment obtainability prevails in urban areas (Ned et al., 2020). The World Health Assembly's vision will require a trained and mobile international workforce. There is an international shortage of professionals who are specially trained in rehabilitation services (Agho & John, 2017; Lor et al., 2018). In addition to the continued recruitment of rehabilitation practitioners and researchers from the Global North to serve in lower- and middle-income countries (LMIC), itinerant in-country experts in LMICs will also be necessary to reach the hard to reach. Telehealth services might be an option to address accessibility issues. It's evidenced in the literature that in our post-COVID era, more and more patients are expecting telemedicine options (Sukhov et al., 2020). However, potential connectivity limitations related to

internet speed, poverty, device capabilities, and privacy matters must be mitigated in order to facilitate this type of access.

Undergraduate Rehabilitation Education (URE)

The identification of the need for more rehabilitation professionals in global health settings is the first step. However, the corresponding scarcity of post-secondary rehabilitation education training programs is an underlying problem. As previously stated, many countries in the Global South (e.g., Lebanon, Philippines, Uganda, Togo, Ethiopia, Kenya, Ghana, and South Africa) have documented a need for more rehabilitation specialists in areas such as speech and language impairment, vision loss, traumatic brain injury, vocational rehabilitation, and mental illness - including substance abuse (Boutros & Fakih, 2023; Cobley, 2015; Hashemi et al., 2017; Pendse et al., 2019; Pollard, 2022; Wylie et al., 2023). Future speech and language pathologists, vision therapists, cognitive rehabilitation professionals, and others need access to the appropriate academic programs to prepare them for specialized practice in the Global South. And disciplines within the rehabilitation field that are even less prevalent in countries in the Global South, such as rehabilitation psychology, social work, and applied behavior analysis therapy should also be explored as areas needing curricular development (Bentley et al., 2016; Dorji, 2021).

In-country development of rehabilitation professionals will require local universities to establish and expand academic programs of study that standardize and legitimize the training of that country's future rehabilitation practitioners. Yet even this is a long-term solution to a pressing, time-sensitive issue, particularly because specialized rehabilitation treatment (e.g., physiotherapy, occupational therapy, mental health counseling) is carried out by graduate-level trained experts – requiring years of training and credentialing after undergraduate degree attainment.

While this agenda should not be abandoned, a concurrent focus on the development of an entry-level rehabilitation workforce in the Global South is necessary. Rehabilitation practitioners who have completed secondary school, with an additional certificate, associate's, or bachelor's degree in a rehabilitation field can work alongside, and at times, in place of licensed clinicians. The following is a sample list of entry-level rehabilitation practitioner roles that can more rapidly, affordably, and broadly meet rehabilitation health needs internationally: Case Manager, Mental Health Technician, Patient Service Specialist, Job Coach, Residential Treatment Assistant, Geriatric Aide, Life Skills Coach, Behavior Interventionist, and Special Education Instructional Aide. Being mindful of not using the titles counselor or therapist for individuals who do not have graduate degrees in rehabilitation fields helps to delineate scopes of practice and levels of expertise. These professionals are also well positioned to pursue further, specialized, graduate study later in their careers.

Some countries in the Global South have made significant strides in the development of undergraduate rehabilitation programs, while also recognizing areas for improvement. As of 2018, Indonesia offered 3- and 4-year diploma programs in occupational therapy, speech and language therapy, and prosthetics and orthotics at two state universities (Nugraha et al., 2018). Social work diplomas and bachelor's degrees were available across 9 universities. And 27 physiotherapy diploma and bachelor's degree programs were available across Indonesia (Nugraha et al., 2018). The presence of these programs, in addition to many physiatry programs, do not constitute enough academic training programs to meet the growing demands for rehabilitation professionals in Indonesia. There is a need to strengthen the workforce and improve how they are dispersed by increasing educational opportunities. Nugraha et al. also recognized the utility of the ICF framework in rehabilitation service implementation (2018).

More than half of the Sub-Saharan African countries that identify as English-speaking do not have any occupational therapy or physical therapy academic programs at all – which would typically be framed within undergraduate degrees in that part of the world. Students in Sub-Saharan Africa who wish to pursue graduate degrees in these disciplines could only do so in Nigeria or South Africa (Agho & John, 2017). The limited number of rehabilitation practitioners in Africa must be addressed by increasing the breadth and width of these programs across the continent, which can be facilitated by inter-country collaboration (Agho & John, 2017).

China is a middle-income country that also has a recognized need to support its aging population, as China's 60 and older citizens constitute almost one-fifth of the world's elderly population (Sun et al., 2022). Roughly thirty years ago marks an important shift in Chinese colleges and universities that has led to a proliferation of rehabilitation-related vocational and undergraduate programs at around 500 colleges and universities (Sun et al., 2022). An estimation of upwards of 14,000 are currently working in rehabilitation therapy adjacent fields in China. This success is attributed to improvements in the economy, policy support, the large number of institutions of higher education in China, and China's purposive efforts to align Chinese rehabilitation curriculum with international standards – such as the ICF (Sun et al., 2022).

In the United States, the first undergraduate rehabilitation education program was created in 1958, specifically to address a need communicated by the Pennsylvania Bureau of Vocational Rehabilitation and the State Office of the Blind (Hylbert, 1963). The hope was for these students to enter the rehabilitation field with bachelor's-level training and to strengthen the rehabilitation workforce. Existing academic degree programs in psychology, education, and sociology at the time were deemed inadequate in preparing future rehabilitation practitioners with the skillset that was needed. The creation of a bachelor's degree program in rehabilitation at Penn State University was considered an experiment. Yet sixty-five years later and counting, this program persists and has evolved into a

Bachelor of Science in rehabilitation and human services. Graduates of this program do directly enter the field to work, but also pursue master's- and doctoral-level study in fields such as rehabilitation counseling, occupational therapy, physical therapy, mental health counseling, substance abuse counseling, applied behavior analysis therapy, law, and many others. Several universities in the United States have similar URE degree programs today, but there are not enough. A 2022 study identified only 40 undergraduate rehabilitation education programs in the United States (Oswald & Jenkins, 2022).

A university that wishes to create academic programs in undergraduate rehabilitation education must first conduct a needs assessment to determine local health needs, local student interests, and the availability of university resources, to determine the capacity for program development. The following is a list of possible courses to consider incorporating into a generalist URE program: 1) Rehabilitation History and Legislation; 2) Ethics; 3) Disability Culture; 4) Medical Aspects of Disability; 5) Psychological Aspects of Disability; 6) Assessment Tools; 7) Theoretical Approaches; 8) Case Management; 9) Disability Across the Lifespan; and 10) Supervised Fieldwork. While an argument can be made for the utility of all of these courses in a URE program, the content would be extremely country-specific, and should not be arbitrarily developed in one country to be used universally. Also, the level of importance of a course will vary across country contexts. However, a case should be made for the importance of offering a culminating fieldwork course (e.g., practicum, internship). When a student completes their required coursework, a community-based service-learning role in a clinic, hospital, or rehabilitation agency will grant them much needed hands-on experience and supervisory feedback, before officially entering the field (Beidokhti & Moradi, 2018). In addition, these experiences can confirm or refute a student's interest or suitability for their proposed career goal or career setting (Ahluwalia et al., 2014).

Before students can be taught, qualified instructors must first be identified, trained, or hired. A decision must then be made about the type of academic program that should be developed (e.g., certificate, associate's, bachelor's). Other areas of consideration are accreditation needs, methods of in-country standardization, credentialing, and related legal considerations. Universities should consider professional consultant services to assist with this process, particularly in countries lacking comparable academic programs and legislative endorsement, or where the identity of rehabilitation as a field is lacking.

Complementary Career Paths

An alternate entry-level rehabilitation role, more common in countries in the Global North, is that of peer support staff. Peer support professionals help to close the gap that can exist between rehabilitation practitioners and patients with mental health diagnoses – most notably because peer support staff have mental health diagnoses themselves (Shalaby & Agyapong, 2020). This is a principal criterion for qualification within this profession. These individuals, who have progressed well on their rehabilitation journeys, support clients and patients from a place of empathy and hope, as examples of rehabilitation success. Peer support staff are individuals with lived experience and are invaluable resources on rehabilitation clinical teams, while also being trained professionals. They reduce the burden on the healthcare system and improve patient engagement and self-confidence (Shalaby & Agyapong, 2020). And importantly, peer support roles establish a career path for people with disabilities, in a world where they are chronically unemployed, underemployed, and victims of discrimination in the workplace (Boutros & Fakih, 2023; Narayanan, 2018; Saleh & Bruyère, 2018).

Lastly, a cultural broker is another essential, entry-level practitioner role in rehabilitation and human services arenas. A cultural broker bridges potential "cultural divides" between clinical team members, patients, and families, because of differences in language, religion, country of origin, and other cultural identities that can shape perspectives related to health decision-making (Akande, 2021, p. 34). A cultural broker is a culture expert, that can translate and interpret communications related to health conditions and treatment. Most importantly, a cultural broker is a client advocate. People with disabilities experience vast amounts of discrimination, including from healthcare providers and family members. A cultural broker can significantly impact the treatment and rehabilitation experiences of the clients that they serve.

Combatting Attitudinal Barriers

Education is a potentially strong antagonist against discrimination. From a social justice approach, educating future rehabilitation practitioners about the rights, experiences, needs, and objectivities of disability experiences should help to mitigate biases and maltreatment against future patients, but also peers and community members (Girli et al., 2016; Liasidou, 2014). Otherwise, there is a risk that future rehabilitation practitioners can further marginalize and traumatize their clients, particularly due to the sensitivities brought about by the power differentials that exist between practitioner and patient (Hussey et al., 2016). In a study by Hussey et al. (2016), a female participant shared her deductions about her experiences with healthcare providers.

It's still a difficult process and it's still something that people are still afraid of persons with disabilities. They just, and I do have to say not all persons are comfortable with even learning or becoming sensitized with persons with disabilities. (Hussey et al., 2016, p. 214)

Educators may also exhibit poor attitudes that can act as obstacles to the social integration of their students within the university community (Lett, 2020). Instructors outside of the rehabilitation or health disciplines, who do not have professional knowledge of disability culture, may be more likely to engage in discriminatory behaviors. However, professionals within the field with knowledge on disability topics are not presumptively exempted. They are capable of discriminatory actions as well (Hussey et al., 2016; VanPuymbrouck et al., 2020). In order for rehabilitation academic programs or students with disabilities to be successful at a university, they must be welcomed and accepted. Creating a culture of acceptance at a university can translate into neighboring communities and cultures (Ilaltdinova et al., 2022). In addition, students enrolled in URE programs can self-advocate and spread awareness about their experiences, needs, and human rights.

For countries that are signatories, supporting, enforcing, and teaching about the Convention on the Rights of persons with Disabilities – an international treaty – is a great place to start as a university community (Harpur & Stein, 2022).Top-down policy implementation within universities may be needed to encourage the acceptance of the need for URE, students with disabilities on the university campus, and accessibility and accommodations of students with disabilities on the university campus (Akande, 2023). Government policies should be translated into university policies. If the rights of person with disabilities are to be upheld politically, then there must be a sufficient workforce of trained rehabilitation professionals who are available to promote these rights – through health service provision, supported employment, special education, and reasonable accommodations within a variety of community settings. This will also require the earmarking of government and university funds to support the development and sustainability of URE programs. Likewise, health and rehabilitation agencies that create jobs for rehabilitation practitioners by default create the demands for standardized education and graduates with rehabilitation degrees. People with disabilities who require rehabilitation services experience better program outcomes when practitioners have formal education within the rehabilitation field, as opposed to having undergraduate and graduate degrees in disciplines that are unrelated (Lor et al., 2018).

Discussion

Rehabilitation professional organizations are an essential space for educators, researchers, and service providers to collaborate and share knowledge. Faculty members who seek to initiate the development of URE programs at their universities can find support in these settings and gain access to resources and materials that can initiate the processes of brainstorming and evaluating university needs. Local and international collaboration needs regarding the education of rehabilitation professionals are a recurring theme throughout the research literature, with recent emphases on decolonized collaboration (Lor et al., 2018; Ned et al., 2022). This should include appreciating local cultural nuances, the impact of local histories, underpinnings of theoretical frameworks and models of disability, and the need to instill leadership competencies that embrace community-based collaboration with future clients and patients (Ned et al., 2022).

Research is needed that explores undergraduate rehabilitation education program development in universities in the Global South, from the perspectives of faculty and students. Longitudinal studies that also assess roles and functions of URE graduates around the world, and their career trajectories can serve to improve URE program curriculum and the identification of appropriate faculty. In addition, more studies that highlight the significance of rehabilitation practitioners as part of the clinical team, as opposed to the historical focus on medical doctors and nurses is needed (Agho & John, 2017). And while URE can serve as an important stepping stone, especially in countries with little to no options for formal post-secondary education in the field, the creation and expansion of graduate (e.g., master's, doctoral, post-doc) rehabilitation programs will always be needed to develop future professionals with the capacity to engage in highly specialized care, intricate treatment, and the education, mentoring, and supervision of students (Agho & John, 2017). Therefore, studies that follow and document the growth and evolution of URE into graduate education can provide insight into the process within country contexts.

Conclusion

Continued globalization, a growing aging population, and the persistence of chronic health conditions and disability are critical reasons for the needed expansion of rehabilitation education disciplines. Several barriers limit this growth, such as a lack of awareness and understanding of the field, the prioritization of medicine and public health, minimal political support, and a focus on rehabilitation practitioners with graduate-level training. The ICF model provides an important reminder for the need for robust clinical teams in international conversations about health. Sufficient and efficient treatment protocols embrace, preventative, curative, and rehabilitative care interventions. They also require a robust labor force. Many countries in the Global South have conceded to the under-resourced nature

of their health systems, and entry-level rehabilitation practitioners at the bachelor's-level are primed to step into professional roles within these systems. Future investigation and global partnership are needed to plan, to implement, and study the development of URE programs in universities around the world. Finally, the development of undergraduate rehabilitation education programs alone will not suffice, if the goal is to minimize disparities for people with disabilities around the world. But researchers and advocates conclude that this approach will constitute a significant piece of the puzzle.

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