

EXECUTIVE SUMMARY

Background

Rehabilitation services can improve body functioning, activity levels, participation, and quality of life of people with disabilities and chronic health conditions; as well as contribute to reducing poverty. The number of people who would benefit from rehabilitation services is expected to increase with shifting demographics of health conditions, specifically increases in non-communicable conditions, injuries, and an aging global population. There is critical need to strengthen rehabilitation services within resource limited environments (RLEs) to address gaps in availability and quality, and ensure equal access.

Objectives

This technical report summarizes the methods and results of an evidence review on service delivery of rehabilitation services in RLEs that was conducted to support the development of World Health Organization (WHO) Guidelines on Health-Related Rehabilitation.

The evidence review served to characterize the breadth and depth of research in this field and provide preliminary grading and analysis on a subset of evidence to inform the WHO Guidelines on Health-Related Rehabilitation. This review was not designed to produce specific guideline recommendations.

Evidence Review Process

We conducted our review in two phases. Phase 1 involved a scoping review that was broadly inclusive and aimed for comprehensive coverage regardless of the type or quality of evidence. The scoping review provided a picture of the common service delivery topics, regions, populations addressed in the included literature, as well as study designs. Phase 2 involved an evidence synthesis of a subset of high quality evidence, specifically systematic reviews (SRs) and randomized controlled trials (RCTs), that addressed three themes (home-based rehabilitation, task-shifting, and telerehab). These themes were selected in collaboration with the WHO program officer and methodologist, and were limited to three due to the size of the review (e.g., timeline) and need to avoid duplication with other similar reviews commissioned by WHO.

Search Strategy

We searched the academic databases Pubmed, CINAHL, and EMBASE. Searches were reviewed and refined by a health science librarian and guided by our expert panel. We also included additional high quality RCTs and systematic reviews publications identified from multiple sources such as back searching key documents, and conducting a cited reference search through SCOPUS.

Selection Criteria

For the scoping review, we included articles that addressed service delivery in RLEs (both in low and middle income countries [LMICs] and in resource limited areas of high income countries) as a primary topic, that had been published between 2000-2013, and included research evidence. Studies were not limited by disability type or health condition, age, or type of research. Studies from well-resourced settings or focused

on high income groups were excluded in order to capture evidence that was most relevant and applicable to RLEs.

For the evidence synthesis, we examined high quality studies (i.e., (SRs and RCTs)) from the scoping review to identify a subset of studies for further analysis. Only high quality studies were considered for evidence synthesis based on guidance provided by the WHO program officer and methodologist, and recommendations within the WHO handbook for Guideline Development (2012). WHO emphasizes the use of GRADE (grading of recommendations, assessment, development and evaluation) approach for assessing evidence quality, and the PICO format ([P] patient problem or population, [I] intervention, [C] comparison and [O] outcomes). This format and evidence grading system served to exclude many highly relevant research topics because the studies were less likely to include a comparator in the research design. For example most of the evidence on barriers to access, availability of services, equity of services, and quality of services were excluded from the evidence synthesis.

Data Collection and Analysis

For the scoping review, exclusion/inclusion decisions and data extraction was conducted by a single reviewer. A thematic and numeric summary was created based on the extracted elements in order to characterize the available research. For the evidence synthesis, limited extraction was conducted on all high quality studies (SRs and RCTs) by one reviewer

For select RCTs, data were extracted into the Review Manager (RevMan) software developed by Cochrane Collaboration. Studies were characterized, bias was evaluated, and outcomes were coded in RevMan. Data from RevMan were then exported to GRADEPro for evidence grading and development of GRADE profiles and Summary of Findings tables.

Results

The initial search resulted in 3817 results. An additional 34 manuscripts were added based on SCOPUS searches and back searching key documents for a total of 3851 included publications. After initial screening, we excluded 3453 records for a total of 398. After secondary screening to identify high quality research, 50 studies were included.

For our scoping review that was based on data extracted from abstracts for 398 studies, we determined:

- There is a general increase in the number of publications per year over time.
- Research studies are geographically spread across global regions, with the lowest percentage from Middle East/North Africa (9%).
- Over half the studies focus on populations with non-communicable diseases/conditions, the majority of which cover diabetes, mental health, heart disease, and stroke.
- The top three systems-level themes of included publications were access and barriers, availability of services, and self-management.
- The majority of studies used observational study designs (87%).

For the phase 2, evidence synthesis, three system-level themes were selected in collaboration with WHO for conducting further evidence grading and synthesis including:

- Home-based rehabilitation
- Telerehabilitation
- Task-shifting

While there were 23 preliminary system-level themes identified through the scoping review, synthesis of more than three themes was not possible due to size of review. The three were selected in collaboration with the WHO program officer and methodologist based on the availability of high quality evidence, relevance to inform building capacity of rehabilitation service delivery, and to avoid duplication with other evidence reviews, specifically WP3 systematic reviews (PICO questions) completed by the workgroup at the University of Toronto.

Our findings on these three themes suggest that:

A variety of home-based intervention models may be effective in improving health outcomes and reducing risk factors for individuals with disabilities, communicable diseases and chronic conditions, as well as caregivers; and reduce barriers to accessing care such as lack of transportation.

- Three RCTs show that home-based rehabilitation instead of usual care is effective in stroke care and cardiac rehabilitation (Jianjun, 2009; Salvetti, 2008; Wang, 2012). For all three studies, usual care meant typical discharge and follow-up procedures such as providing instructions, encouragement, and follow-up appointments; whereas home-based rehabilitation interventions were additional supports provided post-discharge.
- One SR (Taylor, 2010) that compared the effectiveness of home-based cardiac rehabilitation programmes compared with supervised centre-based cardiac rehabilitation shows that both models appear to be equally effective in improving the clinical and health-related quality of life outcomes in acute myocardial infarction and revascularisation patients.
- Observational and experimental evidence of varying quality shows that home-based rehabilitation is effective for addressing needs of people with HIV/AIDS, stroke, heart disease, chronic obstructive pulmonary disease (COPD), cerebral palsy, asthma, filarial lymphedema, caregivers for and individuals with dementia, and individuals with SCI who are transitioning from acute-care to the community.

Telerehabilitation (telerehab) is effective in improving self-management behaviors for people with chronic health conditions, conducting hearing assessments and treatments, among other applications, and reduces barriers to accessing care, particularly for rural population.

- One SR (Johansson, 2011) showed telerehabilitation in post-stroke care may improve stroke survivors' and caregivers' health although the quality of evidence included in this review was low.
- Observational and experimental evidence of varying quality shows that telerehab approaches are effective in providing support and services for people with diabetes, heart disease, stroke, hearing impairments, communication impairments, cleft palate, burns, and neurological conditions.

- Telerehab applies to a wide range of technologies and models from automated text messaging to more interactive technologies such as virtual reality systems.
- Telerehab has high levels of satisfaction and acceptance among practitioners and participants, though barriers to participation and adherence must be addressed.

Task-shifting (defined as a process of moving specific tasks to health workers with different, often fewer, qualifications who would typically not perform these tasks) may be effective in providing self-management support and psychosocial rehabilitation to address the needs of people with intellectual disabilities, mental health and other chronic health conditions.

- Two RCTs one that compared a task-shifting intervention with waitlisted control, and one that compared an educational intervention implemented with a task-shifting approach show improved health outcomes in people with diabetes, and improved self-management knowledge and behaviors for children with asthma (Spencer, 2011; Horner, 2008).
- Four SRs that synthesize evidence on the effectiveness of lay health workers in addressing chronic conditions show task-shifting may improve mental health status, reduce caregiver burden and increase disease prevention behaviors (Goris, 2013; Clarke, 2013; Mutamba, 2013; van Ginneken, 2013).
- Observational and experimental evidence of varying quality shows that task-shifting approaches are effective in the community-based rehabilitation model to serve needs of people with disability, and in providing care and services for people with diabetes, leprosy, clubfoot, and caregivers for children with intellectual disabilities.
- Non-specialists involved in task-shifting interventions have a wide variety of roles and skill sets (e.g., physical therapist assistants, multicultural health workers).

Research Recommendations

These recommendations are intended for the Guidelines Development Group as well as the broader rehabilitation research community working in RLEs.

Explore and review evidence based on high priority systems-level themes. The scoping review served to identify evidence on numerous systems-level themes yet further analysis of these themes was outside the scope of this project. Exploring these themes may be relevant for the Guidelines Development Group and decision makers who play a central role in developing and strengthening rehabilitation services within health systems. Examples of systems-level topics with a higher volume of evidence (primarily observational) include access and barriers to services, availability of services, and self-management.

Employ review methodologies that include observational studies in future reviews. Given the volume of rich data available in observational research, evidence review methods should expand study-design selection criteria to include observational studies and apply suitable review methods (i.e., systematic review of qualitative research, meta-synthesis, realist reviews).

Address gaps in research. There is a need for higher quality and larger studies in the field of rehabilitation service delivery in RLEs, and studies that address under represented system-level topics (e.g., equity of services, coordinated services) to inform capacity building of service delivery.

Employ study designs that are appropriate for systems-level rehabilitation research. It is well documented that the gold standard of comparison intervention studies (i.e., RCTs) are often not feasible or the best model within the field of rehabilitation due to small sample size, individualization and customization of treatment that is often required, challenges in allocation concealment and blinding, and the ethical concerns regarding control groups (Johnston, et al., 2009). This situation is further accentuated when looking at systems-level rehabilitation research where comparison interventions are much less common than what is found in clinical research. Researchers should apply rigorous study designs other than RCTs, to advance this field and adhere to reporting guidelines for observational studies (Chan, 2014).

Clarify the concept of ‘rehabilitation services’. Considerable conceptual work is required to develop a unifying framework, taxonomy and definitions for the broad concept ‘rehabilitation services’ that can be operationalized in research, practice and policy. While there have been recent efforts to develop of taxonomy for clinical practice in rehabilitation that can be applied internationally (Dijkers, 2014), this effort needs to be expanded to address high priority systems-level interventions.

Clarify distinction between clinical and systems-level evidence. Building the capacity of health systems has been an area of focus for the WHO for over a decade, and while health systems research and research resources to advance this field have been rapidly increasing (i.e., <http://www.mcmasterhealthforum.org/hse/>), we were not able to locate a well-established approach for differentiating clinical versus systems-level evidence.

There is also an argument to be made for including clinical evidence to inform systems-level decisions. Identifying effective clinical practices may also be useful and relevant to policy makers in making decisions about the types and arrangement of services that should be delivered. Studies on the effectiveness of clinical interventions (exercise-based therapy, or complementary and alternative medicine); and specific clinical techniques (Ponseti method, foot care practices to reduce ulcers) were excluded from this review if they did not address systems-level themes.