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Community-based rehabilitation for people with physical and mental disabilities in low- and middle-income countries (Protocol)

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[Intervention Protocol]

Community-based rehabilitation for people with physical and mental disabilities in low- and middle-income countries

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ABSTRACT

This is the protocol for a review and there is no abstract. The objectives are as follows:

To assess the effectiveness and cost-effectiveness of community-based rehabilitation for people with physical and mental disabilities in low- and middle-income countries.

BACKGROUND

Description of the condition

Disability is an umbrella term for impairments, activity limitations, and participation restrictions, denoting the negative aspects of the interaction between an individual (with a health condition) and that individual's contextual factors (environmental and personal factors) (WHO 2001; WHO 2011). People with disabilities (PWD) therefore include those who have long-term physical, mental, intellectual or sensory impairments resulting from any physical or mental health conditions which, in interaction with various barriers, may hinder their full and effective participation

in society on an equal basis with others (UN 2008). This view of disability is therefore an expansion beyond the traditional view, which focused on impairments only.

The World Disability Report estimates that there are over one billion people with disabilities in the world, of whom 110 to 190 million experience very significant difficulties (WHO 2011). This corresponds to about 15% of the world's population, and is higher than previous World Health Organization (WHO) estimates. These figures therefore suggest an increase in the prevalence of disability, potentially due to population ageing and the rise in chronic conditions. However, the data underlying these estimates are sparse, making it difficult to gauge trends over time or their causes.

It is widely reported that PWD are excluded from education,

health, and employment and other aspects of society, and that this can potentially lead to or exacerbate poverty (WHO 2011). This exclusion is contrary to the essence of the United Nations (UN) Convention on the Rights of Persons with Disabilities, which is an international human rights instrument of the UN intended to protect the rights and dignities of PWD (UN 2008). This Convention calls upon all countries to respect and ensure the equal rights and participation of all PWD to education, health care, employment and inclusion in all aspects of society. The text was adopted by the UN General Assembly in 2006, and came into force in 2008. By April 2012, it had 153 signatories and 112 parties. Effective interventions therefore need to be identified that will enhance participation in society by PWD and thereby enforce the Convention.

Description of the intervention

The UN Convention states that comprehensive rehabilitation services including health, employment, education and social services are needed “to enable PWD to attain and maintain maximum independence, full physical, mental, social and vocational ability, and full inclusion and participation in all aspects of life” (UN 2008). A range of interventions can be made available to PWD, extending from purely medical (e.g. hospital treatments) to exclusively social (e.g. inclusion in family events). Comprehensive rehabilitation services may be preferred to isolated interventions, given the recommendation of the UN Convention and the wide range of needs of PWD to enable participation.

Community-based rehabilitation (CBR) is the strategy endorsed by WHO (WHO 2010a) for general community development for the rehabilitation, poverty reduction, equalisation of opportunities, and social inclusion of all PWD. The concept was first introduced in an unpublished WHO report in 1976 (WHO 1976; Finkenflugel 2004) as a promising strategy to provide rehabilitation for PWD in developing countries and as part of the broader goal of reaching ‘Health for All by the Year 2000’ (WHO 1978). Since the first training manual published in 1980 (Helander 1980) and updated in 1989 (Helander 1989), the concept has evolved to become a multi-sectoral strategy. CBR is implemented through the combined efforts of PWD themselves, their families and communities, and the relevant governmental and non-governmental health, educational, vocational, social and other services. CBR is delivered within the community using predominantly local resources. The CBR matrix (WHO 2010a) provides a basic framework for CBR programmes. It highlights the need to target rehabilitation at different aspects of life including the five key components: health, education, livelihood, social activities, and empowerment. Each component consists of five elements where the different activities are classified. A CBR programme is formed by one or more activities in one or more of the five components. Thus, a CBR programme is not expected to implement every component of the CBR matrix, and not all PWD require assistance in each

component of the matrix. However, a CBR programme should be developed in partnership with PWD to best meet local needs, priorities and resources.

The CBR guidelines were launched in October 2010 to provide further direction on how CBR programmes should be developed and implemented (WHO 2010a). Although CBR is currently implemented in over 90 countries, in reality only 2% of PWD are estimated to have access even to basic health and rehabilitation services (Meikle 2002). The scaling up of CBR is therefore urgently needed, but there is also a need for a stronger evidence base on the efficacy and effectiveness of CBR programs (Finkenflugel 2005; Hartley 2009; WHO 2011) to support the expansion in coverage of CBR.

How the intervention might work

A health condition may lead to an impairment, which could restrict full participation in aspects of society, thus resulting in disability. Providing CBR may reduce some of the consequences of the impairment, by facilitating participation by PWD in the domains of health, education, livelihood, social activities, and empowerment. CBR could therefore range from providing assistive devices in the community to increase mobility, to coordinating with local schools to ensure inclusion of children with disability, offering vocational rehabilitation to increase wage employment, family counselling to improve relationships, and the establishment of self-help groups to improve political participation. The outcomes of CBR will therefore vary depending on the targets of specific programmes, but could include improving social participation, clinical outcomes and quality of life among PWD.

Why it is important to do this review

There are estimated to be at least 1 billion PWD in the world. Many of these PWD will require CBR to meet their basic needs, ensure inclusion and participation, and enhance the quality of life of PWD and their families, their caregivers or their communities (WHO 2011). Unfortunately the coverage of CBR is very low (Meikle 2002), and the evidence has not been comprehensively assessed to identify whether CBR is effective, and under which circumstances. Establishing an evidence base for the effectiveness of CBR is inherently difficult (Hartley 2009). Each individual programme is tailored to specific needs and settings and therefore may include a different focus, different components and different client types. Furthermore, the impact of CBR can be measured in a variety of domains. The only available literature review on CBR in developing countries (Finkenflugel 2005) found that the impact evidence base is “fragmented and incoherent” for almost all aspects of CBR, and noted methodological concerns with many studies. However, the authors did not assess the overall impact of CBR in their review. Other literature reviews have reported more positively

on the literature, but were more limited in scope, focusing on specific geographical locations (Velema 2008) or types of disability (Wiley-Exley 2007; Evans 2008; Robertson 2012). Available systematic reviews are also limited in scope, covering either single CBR interventions or single aspects of disability. For instance a co-registered Cochrane/Campbell systematic review focuses on personal assistance for adults (Mayo-Wilson 2008a; Mayo-Wilson 2008b) and children (Mayo-Wilson 2008c; Mayo-Wilson 2008d; Mayo-Wilson 2008e) in both developed and developing countries.

There is a need to assess the full evidence base, updating previous reviews comprehensively and providing an overview assessment, to address the question ‘What are the impacts of community-based rehabilitation for people with disabilities in low- and middle-income countries?’ This will be the first systematic review to our knowledge to address this question comprehensively.

OBJECTIVES

To assess the effectiveness and cost-effectiveness of community-based rehabilitation for people with physical and mental disabilities in low- and middle-income countries.

METHODS

Criteria for considering studies for this review

Types of studies

Randomised controlled trials, non-randomised controlled trials, controlled before-after studies (with one point of evaluation after the intervention), controlled interrupted time series studies (with multiple points of evaluation after the intervention), economic studies (cost-effectiveness analyses, cost-utility analyses, cost-benefit analyses, economic modelling) in which the outcome is measured before and after the intervention or an intervention is studied against another intervention with baseline data. We include other types of controlled trials due to the expected scarcity of randomised controlled trials in low- and middle-income countries. The analysis of the different types of studies will be carried out separately.

Types of participants

People with disability who live in low- and middle-income countries, and/or their family, their caregivers, and their community.

Disability is defined as impairments, activity limitations, and participation restrictions denoting the negative aspects of the interaction between an individual (with a health condition) and that individual’s contextual factors (environmental and personal factors) (WHO 2001; WHO 2011).

We will include participants from low- and middle-income countries only, as this was the original commitment of CBR (Helander 1989).

Types of interventions

After the definition provided within the Community-based rehabilitation (CBR) Guidelines (WHO 2010a) and its recent operationalisation (Lukersmith 2013), we define CBR as a:

- program for people with disabilities (PWD) and/or their family, their caregivers, their community;
- delivered at the community level;
- implemented through the combined efforts of PWD and/or their family/caregiver with at least one of the following stakeholder groups: the community, relevant governmental and no-governmental health, education, vocational, social, and other services;
- focusing at least on one of the following areas: health, education, livelihood, social, empowerment; and
- forming part of local community development.

Due to the lack of a recognised list of long-term physical or mental health conditions associated with disability, we consulted disability experts and created such a list (Appendix 1).

A CBR programme is formed by one or more activities in one or more of the five components (health, education, livelihood, social, empowerment). Lists of activities for each element of the five components are presented within the CBR Guidelines under the section ‘Suggested activities’ (WHO 2010a). The following activities are given as examples:

- health: training PWD in the use of assistive devices; providing information to PWD and their family or their caregivers about the time and location of activities for screening health conditions and impairments associated with disabilities.
- education: providing education and training for families or caregivers of PWD; installing ramps in schools to make them accessible to PWD using wheelchairs.
- livelihood: linking the job-seeker with disability to existing support services; advocating before relevant public and private agencies to ensure accessible housing for PWD.
- social: converting institutions for PWD into rehabilitation centres; providing information to PWD about the sports opportunities available within the community.
- empowerment: helping PWD run meetings of new self-help groups; involving disabled people’s organisations in CBR planning, implementation, and monitoring.

CBR interventions will be compared with:

- facility-based interventions;
- other types of CBR interventions;
- other interventions;
- any mix of the above;
- no intervention.

We will exclude trials if the CBR intervention takes place only in health facilities or schools. Health facilities are defined as places that provide health care: hospitals, clinics, outpatient care centres, specialised care centres.

Types of outcome measures

Primary outcomes

- Functional outcomes, including education (e.g. education level), employment (e.g. employment status), social participation (e.g. number of social activities engaged in), empowerment (e.g. awareness of the condition, awareness of the possible interventions available).
- Disability outcomes, such as extent of disability, measured using validated instruments (e.g. Disability Rating Scale (DRS); Expanded Disability Status Scale (EDSS); Global Mental Health Assessment Tool (GMHAT); Clinical Global Impressions Scale (CGIS)).

Secondary outcomes

- Quality of life, measured using validated instruments (e.g. WHO Quality of Life-BREF (WHOQOL-BREF); Health-Related Quality of Life (HRQoL); Global Assessment of Functioning (GAF); Medical Outcome Study Short Form 36 (SF36)).
- Economic impact, including cost-effectiveness, cost-utility, cost-benefit.
- Adverse effects.

Search methods for identification of studies

We will not restrict the search for studies by language or publication status. Searches will be limited to studies published after 1976 as this is the year in which the concept of community-based rehabilitation was first introduced (WHO 1976; Finkenflugel 2004). Low- and middle-income countries were identified using the World Bank Atlas method (World Bank 2012) (Appendix 2).

Electronic searches

We will search the following electronic databases:

Biomedical databases

- AIM (African Index Medicus) (Global Health Library)
- CENTRAL (Cochrane Central Register of Controlled Trials, *The Cochrane Library*)
- CINHALL Plus (Cumulative Index to Nursing and Allied Health Literature) (EBSCO)
- Cochrane Database of Systematic Reviews (*The Cochrane Library*)
- EMBASE (OvidSP)
- Global Health (OvidSP)
- IMEMR (Index Medicus for the Eastern Mediterranean Region) (Global Health Library)
- IMSEAR (Index Medicus for South East Asia Region) (Global Health Library)
- LILACS (Latin American and Caribbean Health Sciences Literature) (Global Health Library)
- MEDLINE (OvidSP)
- PsycINFO (OvidSP)
- WHOLIS (World Health Organisation Library Information System) (Global Health Library)
- WPRIM (Western Pacific Region Index Medicus) (Global Health Library)

Social sciences databases

- CAB Abstract (OvidSP)
- DARE (Database of Abstracts of Reviews of Effectiveness) (*The Cochrane Library*)
- EconLit (OvidSP)
- ERIC (ProQuest)
- HTA Database (*The Cochrane Library*)
- IBSS (International Bibliography of the Social Sciences) (ProQuest)
- NHSEED (NHS Economic Evaluation Database) (*The Cochrane Library*)
- PAIS International (Public Affairs Information Services) (ProQuest)
- The Campbell Collaboration Library of Systematic Reviews (The Campbell Library)
- Web of Science (Web of Knowledge)

The MEDLINE strategy in Appendix 3 will be adapted as necessary, for use in searching each of the other databases.

Searching other resources

We will search relevant websites of governmental and non-governmental organisations, academics, and disabled people's groups (Appendix 4). Relevant embedded databases and libraries within the websites will be searched manually.

We will contact key authors and institutions to request details of any recently published, in press, unpublished or ongoing studies.

We will search reference lists of included studies and literature reviews.

We will track citations of included studies using Google Scholar.

Data collection and analysis

Selection of studies

The title and abstract of studies yielded from the electronic searches will be independently screened by pairs of review authors against the [Criteria for considering studies for this review](#). If, from the title and abstract, it is not clear whether a study should be included or not, it will be considered in full-text screening. Disagreements will be resolved through consultation with a third author.

Full-text reports of studies meeting the inclusion criteria will be retrieved and then screened by pairs of authors against the inclusion criteria. Disagreements will be resolved through consultation with a third author. We will obtain any missing information necessary for screening by contacting the authors of the study. If the information can not be obtained, the study will be listed under 'Studies awaiting classification'. In order to avoid language bias, studies published in a language other than English, French, Spanish, German, or Italian (languages spoken by the review authors), will not be excluded but they will be listed under 'Studies awaiting classification'. Excluded studies will be listed under 'Excluded studies' and the reason for their exclusion (methods, participants, interventions, publication date, language) will be recorded within the table 'Characteristics of excluded studies'. The review authors will be able to see study information (such as study author names) during the screening process.

In order to avoid outcome reporting bias, studies will not be excluded on the basis of outcomes only. If the study meets all inclusion criteria but the outcomes are not reported, we will contact the authors of the study to obtain missing information.

The full-text of studies published in languages other than English and available in the review author team (French, Spanish, German, Italian) will be screened by one author only.

Relevant literature reviews will not be included but their reference lists will be searched.

Data extraction and management

Data extraction will be performed jointly by two review authors: one author will extract data onto a data extraction form and a second author will verify the correctness of the data against the study report. Disagreements will be resolved through consultation with a third review author. Missing information will be obtained by contacting the authors of the study. [Review Manager](#) software will be used to organise extracted data, which will be reported in the 'Data and analyses', 'Characteristics of included studies', and 'Risk of bias table' sections.

We will develop the data extraction form a priori and pilot it on five included studies. The form will include the following information:

- Methods: including study design and duration of the study.
- Participants: including type of disability, age, sex, country.
- Interventions: details on both the intervention and comparison; including type(s) of CBR, intervention (or comparison) details (i.e. intensity, frequency), agent(s), setting(s).
- Outcomes: including type of outcome(s), measurement instrument(s) (i.e. scale, questionnaire), time-points measured.
- Funding: including types of funder of the study.
- Publication: including publication type (i.e. article, report), publication language.
- Notes: including comments on the study not covered by the previous categories.

Data extraction from studies in languages other than English and available in the review author team (French, Spanish, German, Italian) will be performed by one author only.

Assessment of risk of bias in included studies

Two authors will jointly assess the methodological quality of selected studies: the first author will assess risk of bias using the data extraction form and the second author will verify the correctness of data against the study report. Disagreements will be resolved through consultation with a third author. Assessment of the methodological quality of studies in other languages than English and available in the author team (French, Spanish, German, Italian) will be done by one author only.

For randomised controlled trials, non-randomised controlled trials, controlled before-after studies and controlled interrupted time series studies we will use the van Tulder list ([van Tulder 2003](#)) to assess the risk that a study over- or under-estimates the true intervention effect. Review authors' judgments regarding risk of bias will be graded for each criterion as low, high, or unclear risk of bias. We will assess missing data and attrition rates for each of the included studies, and report the number of participants who were included in the final analysis as a proportion of all participants in the study. Reasons given for missing data will be provided in the narrative summary and we will ascertain the extent to which the results are altered by missing data in order to offer a possible explanation for differences between studies when interpreting the results of the review ([Schulz 1995](#)).

For economic studies (cost-effectiveness analyses, cost-utility analyses, cost-benefit analyses, economic modelling) we will use the Drummond checklist ([Drummond 1996](#)) and the Evers checklist ([Evers 2005](#)) for economic evaluations, and the Philips checklist ([Philips 2004](#)) for economic modelling.

Measures of treatment effect

Analysis will be descriptive in the first instance. We will discuss the strength of the study findings by level of evidence, which will be

based on methodological quality as described by van Tulder ([van Tulder 2003](#)). We will highlight where there are gaps in current knowledge.

We will undertake a meta-analysis if the study populations, interventions, outcomes and study designs are agreed to be sufficiently consistent to allow pooling of data. We will analyse dichotomous outcomes by calculating odds ratios (OR) for each trial with the uncertainty in each result being expressed using 95% confidence intervals (CI). For continuous data we will calculate the treatment effect using standardised mean differences (SMD) and 95% CI where different scales were used by different studies for the assessment of the same outcome, and using mean differences (MD) and 95% CI where studies have all used the same method to measure an outcome.

Where scales measuring the same outcome have different directions of benefit, a minus sign will be added to that measuring a negative direction to ensure that all measurements can be read in the same direction.

The analysis of the different types of studies will be carried out separately.

Unit of analysis issues

Where a study presents results for several periods of follow-up for the same outcome we will include all time-points available, grouping them into short term (0 to 3 months), medium term (3 to 6 months) and long term (6 to 12 months) if this is feasible.

Where multiple treatment/control group types are presented in study reports, we will aim to present the data from each study as consistently as possible with the primary comparison of treatment compared with control group. We will conduct a separate subgroup analysis of studies comparing different types of interventions for different types of disabilities.

Dealing with missing data

We will contact the original investigators to request any missing data as well as information on whether or not data can be assumed to be missing at random. In addition, as mentioned above (see [Assessment of risk of bias in included studies](#)), proportions of missing participants will be reported in the risk of bias assessment, reasons given for missing data will be provided in the narrative summary and the extent to which the results are altered by missing data will be discussed.

Unless the reason for leaving the study early is clearly reported, we will assume that participants who dropped out had no change in level of baseline physical and psychosocial function. When information provided is insufficient to define the original group size prior to leaving the study, we will contact the authors of the study. We will report separately all data from studies in which more than 50% of participants in any group were lost to follow-up, and explore the impact of this on the review findings by means of sensitivity analyses.

Assessment of heterogeneity

We will assess heterogeneity in the results of the studies by visual inspection of the graphical presentations, by performing the Chi² test of heterogeneity (where a significance level less than 0.10 will be interpreted as evidence of heterogeneity), and by examining the I² statistic ([Deeks 2011](#)). We will consider I² values less than 30% as indicating low levels of heterogeneity, values in the range of 31% to 69% as indicating moderate heterogeneity, and values greater than 70% as indicating high levels of heterogeneity.

Assessment of reporting biases

If more than 10 studies are identified for an outcome, we will enter data from the studies into a funnel graph (study effect versus study size) in an attempt to investigate the likelihood of overt publication and related biases.

Data synthesis

We will analyse data using [Review Manager](#) software. If visual examination of results and test statistics (e.g. Chi² test and I² statistic) suggest homogeneity, we will quantitatively combine results for each primary outcome for meta-analysis using a random-effects model. We will combine the odds ratios from the different trials using the Mantel-Haenszel method.

If results are too heterogeneous for meta-analysis or if insufficient data are available to meta-analyse, then we will prepare a narrative synthesis for the results, and use forest plots to show each study's point estimates and error measurements for each primary outcome.

Subgroup analysis and investigation of heterogeneity

If sufficient studies (more than five) are found, we will undertake subgroup analysis to evaluate six possible reasons for heterogeneity through comparing separate subgroups of studies by: (i) quality of the study (ii) type of CBR; (iii) disability type (physical/mental); (iv) severity of disability; (v) age (children/adults (as defined by the study)); (vi) geographical location (low-/middle-income countries).

Sensitivity analysis

If there are sufficient data, we will undertake sensitivity analyses to investigate the robustness of the overall findings in relation to aspects of methodological quality. We will test the sensitivity of results using the number of patients who completed each study and compare trials using intention-to-treat analysis with those who did not.

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- World Bank 2012**
World Bank. *World Bank Atlas Method*. Washington DC, US: World Bank, 2012. [http://data.worldbank.org/about/country-classifications. Accessed 6 February 2012]
- * Indicates the major publication for the study

APPENDICES

Appendix I. List of long-term physical or mental health conditions, and associated impairments, that may result in disability

Due to the lack of a recognised list of long-term physical or mental health conditions associated with disability, we consulted experts and created such a list. Where possible, we classified impairments and conditions in accordance with the International Classification of Disease, 10th Revision (WHO 2010b).

Long-term physical conditions	<p>There is a wide range of musculoskeletal and/or neurological conditions that may result in impairments associated with disability including:</p> <ul style="list-style-type: none"> • cerebral palsy • epilepsy • spina bifida • muscular dystrophy • polio • arthritis • osteogenesis imperfecta • congenital malformation of the limbs • some acquired brain injuries • some orthopaedic conditions (including amputation)
Long-term sensory impairments	<ul style="list-style-type: none"> • Visual impairment including blindness (binocular or monocular) (H54)* • Conductive and sensorineural hearing loss (H90)*
Long-term mental health conditions	<ul style="list-style-type: none"> • Schizophrenia, schizotypal and delusional disorders (F20-29)* • Organic, including symptomatic, mental disorders (includes dementia) (F00-09)* • Alzheimer's disease (G30)*
Long-term intellectual impairments	<ul style="list-style-type: none"> • Mental retardation (F70-79)* • Disorders of psychological development (F80-89)* • Down's syndrome (Q90)*

Note: *Categories and codes from the International Classification of Disease 10th Revision ([WHO 2010b](#)).

Appendix 2. List of low- and middle-income countries

Low- and middle-income countries are defined using the World Bank Atlas method ([World Bank 2012](#)).

Income group	Country
Low-income countries	<p>Afghanistan Bangladesh Benin Burkina Faso Burundi Cambodia Central African Republic Chad Comoros Congo, Dem. Rep Eritrea Ethiopia Gambia, The Guinea Guinea-Bissau Haiti</p>

(Continued)

	Kenya Korea, Dem Rep. Kyrgyz Republic Liberia Madagascar Malawi Mali Mozambique Myanmar Nepal Niger Rwanda Sierra Leone Somalia Tajikistan Tanzania Togo Uganda Zimbabwe
Lower middle-income countries	Angola Armenia Belize Bhutan Bolivia Cameroon Cape Verde Congo, Rep. Côte d'Ivoire Djibouti Egypt, Arab Rep. El Salvador Fiji Georgia Ghana Guatemala Guyana Honduras Indonesia India Iraq Kiribati Kosovo Lao PDR Lesotho Marshall Islands Mauritania Micronesia, Fed. Sts. Moldova

(Continued)

	Mongolia Morocco Nicaragua Nigeria Pakistan Papua New Guinea Paraguay Philippines Samoa São Tomé and Príncipe Senegal Solomon Islands Sri Lanka Sudan Swaziland Syrian Arab Republic Timor-Leste Tonga Turkmenistan Tuvalu Ukraine Uzbekistan Vanuatu Vietnam West Bank and Gaza Yemen, Rep. Zambia
Upper middle-income countries	Albania Algeria American Samoa Antigua and Barbuda Argentina Azerbaijan Belarus Bosnia and Herzegovina Botswana Brazil Bulgaria Chile China Colombia Costa Rica Cuba Dominica Dominican Republic Ecuador Gabon Grenada

(Continued)

Iran, Islamic Rep.
Jamaica
Jordan
Kazakhstan
Latvia
Lebanon
Libya
Lithuania
Macedonia, FYR
Malaysia
Maldives
Mauritius
Mayotte
Mexico
Montenegro
Namibia
Palau
Panama
Peru
Romania
Russian Federation
Serbia
Seychelles
South Africa
St. Kitts and Nevis
St. Lucia
St. Vincent and the Grenadines
Suriname
Thailand
Tunisia
Turkey
Uruguay
Venezuela, RB

Appendix 3. MEDLINE search strategy

MEDLINE (OvidSP) 1946 to present

1. (Community-based rehabilitation or Community based rehabilitation or CBR).sh,ti,ab.
2. (Communit* adj5 (rehabilitat* or health care or healthcare or health service* or health nursing* or health visitor* or health network* or care network* or counsel* or foster home* or foster care* or home care* or homecare or domiciliary care* or preventive health or health education or health promotion or self-help device* or assistive device*)).sh,ti,ab.
3. (Communit* adj5 inclusi* adj5 (education or school* or preschool* or high-school* or environment* or curricul*)).sh,ti,ab.
4. (Communit* adj5 (vocational training or apprenticeship* or employment placement service* or support network* or self-employ* or social service* or social work*)).sh,ti,ab.
5. (Communit* adj5 (personal assistance or personal assistant* or individual support* or disabled people* organization* or disabled people* organisation*)).sh,ti,ab.
6. (Communit* adj5 (empower* or awareness campaign* or self-advocacy or self-help group* or support group* or women group* or political group* or development group*)).sh,ti,ab.
7. (Communit* adj5 inclusi* adj5 (health or education or hous* or social or justice or empower*)).sh,ti,ab.

8. (rehabilitat* adj5 (home based or home-based)).sh,ti,ab.
9. (exp Rehabilitation/ or exp Rehabilitation Centers/ or ((exp Community Health Services/ or exp Social Work/ or exp Self-Help Groups/) and rehabilitat*.sh,ti,ab.)) and communit*.sh,ti,ab.
10. exp Home Care/ and rehabilitat*.sh,ti,ab.
11. 1 or 2 or 3 or 4 or 5 or 6 or 7 or 8 or 9 or 10
12. (Physical* adj5 (impair* or deficienc* or disable* or disabili* or handicap*)).sh,ti,ab.
13. (Cerebral pals* or Spina bifida or Muscular dystroph* or Arthriti* or Osteogenesis imperfecta or Musculoskeletal abnormalit* or Musculo-skeletal abnormalit* or Muscular abnormalit* or Skeletal abnormalit* or Limb abnormalit* or Brain injur* or Amputation* or Clubfoot or Poliomyeliti* or Paraplegi* or Paralys* or Paralyz* or Hemiplegi* or Stroke* or Cerebrovascular accident*).sh,ti,ab.
14. exp Cerebral palsy/ or exp Spina Bifida Cystica/ or exp Spina Bifida Occulta/ or exp Muscular dystrophies/ or exp Arthritis/ or exp Osteogenesis Imperfecta/ or exp Musculoskeletal Abnormalities/ or exp Brain Injuries/ or exp Amputation/ or exp Clubfoot/ or exp Poliomyelitis/ or exp Paraplegia/ or exp Hemiplegia/ or exp Stroke/
15. ((Hearing or Acoustic or Ear*) adj5 (loss* or impair* or deficienc* or disable* or disabili* or handicap*)).sh,ti,ab.
16. ((Visual* or Vision or Eye*) adj5 (loss* or impair* or deficienc* or disable* or disabili* or handicap*)).sh,ti,ab.
17. (Deaf* or Blind*).sh,ti,ab.
18. exp Hearing Loss/ or exp Vision, Low/ or exp Deafness/ or exp Blindness/
19. (Schizophreni* or Psychos* or Psychotic Disorder* or Schizoaffective Disorder* or Schizophreniform Disorder* or Dementia* or Alzheimer*).sh,ti,ab.
20. exp "schizophrenia and disorders with psychotic features"/ or exp Dementia/ or exp Alzheimer disease/
21. ((Intellectual* or Mental* or Psychological* or Developmental) adj5 (impair* or retard* or deficienc* or disable* or disabili* or handicap* or ill*)).sh,ti,ab.
22. ((communication or language or speech or learning) adj5 disorder*).sh,ti,ab.
23. (Autis* or Dyslexi* or Down* Syndrome or Mongolism or Trisomy 21).sh,ti,ab.
24. exp Intellectual disability/ or exp Developmental Disabilities/ or exp Child Development Disorders, Pervasive/ or exp Communication Disorders/
25. ((Disable* or Disabilit* or Handicapped) adj5 (person* or people)).sh,ti,ab.
26. exp Disabled persons/
27. 12 or 13 or 14 or 15 or 16 or 17 or 18 or 19 or 20 or 21 or 22 or 23 or 24 or 25 or 26
28. (Afghanistan or Albania or Algeria or American Samoa or Angola or Antigua or Barbuda or Argentina or Armenia or Azerbaijan or Bangladesh or Belarus or Byelarus or Byelorussia or Belorussia or Belize or Benin or Bhutan or Bolivia or Bosnia or Herzegovina or Hercegovina or Bosnia-Herzegovina or Bosnia-Hercegovina or Botswana or Brazil or Brasil or Bulgaria or Burkina or Upper Volta or Burundi or Urundi or Cambodia or Republic of Kampuchea or Cameroon or Camerons or Cape Verde or Central African Republic or Chad or Chile or China or Colombia or Comoros or Comoro Islands or Comores or Congo or DRC or Zaire or Costa Rica or Cote d'Ivoire or Ivory Coast or Cuba or Djibouti or Obock or French Somaliland or Dominica or Dominican Republic or Ecuador or Egypt or United Arab Republic or El Salvador or Eritrea or Ethiopia or Fiji or Gabon or Gabonese Republic or Gambia or Georgia or Ghana or Gold Coast or Grenada or Guatemala or Guinea or Guinea-Bisau or Guiana or Guyana or Haiti or Honduras or India or Indonesia or Iran or Iraq or Jamaica or Jordan or Kazakhstan or Kenya or Kiribati or Republic of Korea or North Korea or DPRK or Kosovo or Kyrgyzstan or Kirghizstan or Kirgizstan or Kirghizia or Kirgizia or Kyrgyz or Kirghiz or Kyrgyz Republic or Lao or Laos or Latvia or Lebanon or Lesotho or Basutoland or Liberia or Libya or Lithuania or Macedonia or Madagascar or Malagasy Republic or Malawi or Nyasaland or Malaysia or Malaya or Malay or Maldives or Mali or Marshall Islands or Mauritania or Mauritius or Mayotte or Mexico or Micronesia or Moldova or Moldovia or Mongolia or Montenegro or Morocco or Mozambique or Myanmar or Burma or Namibia or Nepal or Nicaragua or Niger or Nigeria or Pakistan or Palau or Palestine or Panama or Papua New Guinea or Paraguay or Peru or Philippines or Romania or Rumania or Roumania or Russia or Russian Federation or USSR or Soviet Union or Union of Soviet Socialist Republics or Rwanda or Ruanda-Urundi or Samoa or Samoan Islands or Sao Tome or Principe or Senegal or Serbia or Montenegro or Yugoslavia or Seychelles or Sierra Leone or Solomon Islands or Somalia or South Africa or Sri Lanka or Ceylon or Saint Kitts or St Kitts or Saint Christopher Island or Nevis or Saint Lucia or St Lucia or Saint Vincent or St Vincent or Grenadines or Sudan or Suriname or Surinam or Swaziland or Syria or Syrian Arab Republic or Tajikistan or TadzhiKistan or Tadjikistan or Tanzania or Thailand or Timor-Leste or East Timor or Togo or Togolese Republic or Tonga or Tunisia or Turkey or Turkmenistan or Turkmenia or Tuvalu or Uganda or Ukraine or Uruguay or Uzbekistan or Vanuatu or New Hebrides or Venezuela or Vietnam or Viet Nam or West Bank or Gaza or Yemen or Zambia or Zimbabwe or Rhodesia).sh,ti,ab,cp.
29. (Africa or Asia or Caribbean or West Indies or Latin America or Central America or South America).sh,ti,ab.
30. exp Africa South of the Sahara/ or exp Asia, Central/ or exp Asia, Southeastern/ or exp Asia, Western/ or exp Latin America/ or exp Caribbean Region/ or exp Central America/ or exp South America/

31. ((Developing or Low-income or low income or Middle-income or Middle income or (Low and middle income) or (Low- and middle-income) or Less-Developed or Less Developed or Least Developed or Under Developed or underdeveloped or Third-World) adj5 (countr* or nation* or world or econom*)).sh,ti,ab.
32. (LIC or LICs or MIC or MICs or LMIC or LMICs or LAMIC or LAMICs or LAMI countr* or third world).sh,ti,ab.
33. (Transitional countr* or Transitional econom* or Transition countr* or Transition econom*).sh,ti,ab.
34. exp Developing countries/
35. 28 or 29 or 30 or 31 or 32 or 33 or 34
36. 11 and 27 and 35
37. limit 36 to yr="1976 -Current"

Appendix 4. List of relevant websites

Websites
3ie (International Initiative for Impact Evaluation)*
AbleData*
ADB (Asian Development Bank)
AFD (Agence Française de Développement)
AfDB (African Development Bank)
AIFO (Italian Association Amici di Raoul Follereau)
APHRC (African Population and Health Research Center)
AusAID (Australian Government Overseas Aid Program)
BasicNeeds
CBM
CDB (Caribbean Development Bank)
CIDA (Canadian International Development Agency)
CIRRIE (Centre for International Rehabilitation Research Information & Exchange)*
COOPITA (Cooperazione Italiana allo Sviluppo)
DFID (UK Department for International Development)
DPI (Disabled Peoples' International)
EADI (European Association of Development Research and Training Institutes)
EBRD (European Bank for Reconstruction and Development)
EDF (European Disability Forum)
ELDIS
EPPI-Centre*
EuropeAid (European Commission Cooperation Office)
FIRAH (Foundation of Applied Disability Research)
GPDD (Global Partnership on Disability and Development)
GTZ (Deutsche Gesellschaft für Technische Zusammenarbeit - German Technical Cooperation)
Handicap international
Hellen Keller International
IDA (International Disability Alliance)
IDB (Inter-American Development Bank)
IDDC (International Disability and Development Consortium)
Irish Aid
Japan International Cooperation Agency (JICA)
Leonard Chesire Disability*
Motivation
NORAD (Norwegian Agency for Development Cooperation)

(Continued)

PAHO (Pan American Health Organisation)
REHABDATA Database (National Rehabilitation Information Center)*
Sangath
SDC (Swiss Agency for Development and Cooperation)
SIDA (Swedish International Development Cooperation Agency)
Sightsavers
Source (International Online Resource Centre on Disability and Inclusion)*
UCL Centre for International Health & Development
UNDP (United Nations Development Programme)
UNFPA (United Nations Population Fund)
UNHCR (United Nations High Commissioner for Refugees)
UNICEF (United Nations Children's Fund)
USAID (United States Agency for International Development)
WB (World Bank)
WHO (World Health Organization)

Note: *Websites with embedded databases and libraries that will be searched manually.

CONTRIBUTIONS OF AUTHORS

All authors contributed to the protocol.

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Several members of the group have previously undertaken systematic reviews on related subjects but not on this particular topic.
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