SCRIPTA SCIENTIA
ISSN: 3134-5824 | Vol. 1 (2026)

Published by
ChauxLab Institute

REVIEW ARTICLE

Effectiveness of Rehabilitation Programs in People Affected by Leprosy: An Integrative Review

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Received: 26 Jan 2026
Accepted: 21 Mar 2026
Published: 22 Mar 2026

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Conflicts of interest: The authors declare no commercial conflicts of interest.

How to cite this article:

Pereira Duarte J, Trierweiler G, Tonini J, Dos Santos Tureta ML, Miranda Ulrich G, Spiguel Nazareth VC, Sobrinho Edmundo FC, Britos Gómez, AP (2026). Effectiveness of Rehabilitation Programs in People Affected by Leprosy: An Integrative Review. *Written Science.* 1: e007

DOI:
https://doi.org/10.66201/ss.v1.9

SUMMARY

Background: Leprosy remains a global challenge due to its neurological sequelae and associated social stigma. Despite pharmacological treatments, disability affects 30% of newly diagnosed cases, making comprehensive rehabilitation an essential process for reintegration. This review aimed to evaluate the effectiveness of such programs in improving patients' quality of life.

Methods: An integrative review was conducted following the PRISMA 2020 methodology, which included 11 studies published between 2020 and 2026 in databases such as PubMed, LILACS, and SciELO. Physical, psychosocial, and community interventions were analyzed using validated scales to measure quality of life (WHOQOL-BREF), physical functioning (SALSA), and stigma (EMIC). The evidence analyzed presented a moderate risk of bias and was predominantly observational.

Results: In a sample of 1,555 participants from endemic countries, significant clinical improvements were observed. Quality of life increased by up to 14.6 points in the physical domain, while severe functional limitation decreased from 34.2% to 18.7%. Self-stigma decreased by 32%, and community-based programs showed a 78% sustainability rate at 12 months, surpassing hospital-based programs. The best outcomes were associated with patients under 45 years of age and early-initiation rehabilitation.

Conclusions: Comprehensive, multidisciplinary programs are effective in restoring functionality and social participation. A community-based approach and early intervention are crucial for therapeutic success. However, the nature of the studies limits the generalizability of the results, highlighting the need for randomized clinical trials to support public policies aligned with the World Health Organization's goal of “zero leprosy.”

Keywords: Leprosy, Rehabilitation, People With Disabilities, Quality of Life, Social Stigma, Community Rehabilitation.

INTRODUCTION

Leprosy continues to pose a global public health challenge. Physical disability and social stigma persist in endemic regions of Asia, Latin America, and Africa, even after completion of multidrug therapy (1). In 2022, more than 140,000 new cases were reported globally (1). Approximately 30% of these cases presented with grade 1 or 2 disability at the time of diagnosis (2). This finding highlights the late detection of the disease. The prevalence of leprosy-related physical disability reflects significant geographic disparities. In high-income countries, the rate of new cases with grade 2 disability is less than 1 per million inhabitants (1). In contrast, in endemic countries such as India, Brazil, and Indonesia, this figure reaches between 10 and 15 per million (3,4). These disparities disproportionately affect rural populations, marginalized ethnic groups, and people with low levels of education (3). Rehabilitation plays an essential role in improving health-related quality of life (5). Its physical, psychological and social dimensions promote the social reintegration of the affected people (6).

The multidrug therapy recommended by the World Health Organization has reduced the global prevalence of leprosy (1). Since the 1980s, reported cases have decreased from over 5 million in 1985 to fewer than 200,000 today (7). However, neurological sequelae, sensory and motor loss, and visible deformities persist (8). Social stigma continues to limit the full community participation of thousands of people who are bacteriologically cured but functionally disabled (9).

The limitations of current methods include several critical aspects. There are no effective vaccines against leprosy (7). Late diagnosis is prevalent in low-endemicity settings where healthcare professionals lack clinical experience (2). The integration of rehabilitation services into national control programs is insufficient (1). Furthermore, standardized protocols for the secondary and tertiary prevention of disabilities are lacking (10).

Recent developments in rehabilitation include promising innovations. Customized orthoses and systematic assessments of hand function using validated instruments are being employed (11). Supervised self-care programs are expanding into decentralized community modalities (12). Psychosocial interventions based on self-help groups show positive results in reducing perceived stigma (9). Educational strategies targeting the general population and healthcare workers are emerging as an essential complement to clinical rehabilitation (5).

The identified knowledge gaps are significant. Randomized controlled trials comparing specific rehabilitation modalities are lacking (10). Validated instruments for measuring functional outcomes outside of Western cultures are not available across multiple cultural contexts (13). Evidence on the long-term cost-effectiveness of community-based versus hospital-based interventions is scarce (4).

The main objective of this review is to evaluate the effectiveness of rehabilitation programs for people with disabilities secondary to leprosy, including physical, psychosocial, occupational, and community-based modalities. The specific objectives are: 1) to identify and characterize rehabilitation interventions implemented in endemic contexts during the period 2020–2026; 2) to analyze the impact of these interventions on specific domains of quality of life; 3) to determine the factors associated with better rehabilitation outcomes; 4) to examine the effect of rehabilitation on reducing perceived stigma and improving social participation; and 5) to synthesize the available evidence to inform public policy decisions aimed at integrating rehabilitation services into national leprosy control programs. This review contributes to achieving the World Health Organization's goal of “zero leprosy” (1).

METHODS

Study design and protocol

This integrative review was conducted in accordance with the 2020 PRISMA statement and the methodological framework of Whittemore and Knafl (14,15). A rigorous approach was adopted, including a structured search of electronic databases, selection using predefined eligibility criteria, data extraction using standardized forms, assessment of the risk of bias, and narrative synthesis of the results. The methodological protocol was developed a priori by the research team before the search began. The integrative review was selected as the methodological design due to its ability to synthesize diverse literature—including observational, quasi-experimental, and qualitative studies—when methodological heterogeneity precludes quantitative meta-analysis.

The fundamental purpose was to identify, analyze and synthesize the existing evidence on the effectiveness of rehabilitation programs in people affected by leprosy, with emphasis on health-related quality of life, physical functionality, reduction of perceived stigma and social participation.

Search strategy

The literature search was conducted between January 2020 and March 2026 in the electronic databases PubMed, LILACS, and SciELO. The March 2026 cutoff date reflects the time the review was conducted, following standard practice for prospective integrative reviews. It is acknowledged that studies published within the last 12 months of the period may lack the analytical maturity of studies published more recently, which is an explicit limitation of this review.

Controlled descriptors were extracted from Medical Subject Headings (MeSH) and Health Sciences Descriptors (DeCS), combined using Boolean operators AND, OR, and NOT. The main terms included: “Leprosy” OR “Hansen Disease”, combined with “Rehabilitation” OR “Physical Therapy Modalities” OR “Psychosocial Intervention” OR “Community-Based Rehabilitation” OR “Occupational Therapy”, and outcome terms: “Quality of Life” OR “Functional Status” OR “Disability” OR “Social Stigma” OR “Social Participation” OR “Self-Care”.

Filters were applied to limit the search to studies involving human subjects. The languages included were Spanish, English, and Portuguese. No country of origin restrictions were applied. The reference lists of the selected articles were manually reviewed, and technical documents from the World Health Organization were consulted (1).

The selection of PubMed, LILACS, and SciELO reflects the specific coverage of leprosy literature in endemic regions of Latin America and Asia, where the greatest burden of the disease is concentrated. It is acknowledged that the omission of Embase, Scopus, and the Cochrane Library is a limitation that may reduce the sensitivity of the search and potentially exclude high-quality clinical trials or literature published in other languages. This limitation is explicitly discussed in the corresponding section.

The reference by van Brakel et al. (6) was exceptionally included as a seminal work prior to the search period, given its foundational relevance to the conceptual definition of the disability model in leprosy according to the International Classification of Functioning, Disability and Health. This practice is consistent with the recommendations of the Whittemore and Knafl framework (15) for integrative reviews.

Eligibility criteria

The inclusion criteria encompassed primary studies published between January 2020 and March 2026, with populations of people with a confirmed diagnosis of leprosy by clinical, bacteriological or histopathological criteria, with or without disability grade 1 or 2 according to the World Health Organization (1).

The interventions considered were explicitly defined according to the PICO framework: (P) people with a confirmed diagnosis of leprosy and associated physical or psychosocial disability; (I) rehabilitation programs that included at least one of the following components: physical rehabilitation (physiotherapy, therapeutic exercises, orthotics), psychosocial rehabilitation (psychological therapy, support groups, stigma reduction), occupational rehabilitation (activities of daily living, job placement) or community rehabilitation (supervised self-care, health education); (C) absence of intervention, usual treatment or alternative comparator modality; (O) quality of life, physical functionality, perceived stigma or social participation measured with validated instruments.

Outcomes of interest included standardized measures of quality of life using validated instruments such as the WHOQOL-BREF, the SF-36, and the WHO-DAS II (5); physical functioning assessed using the SALSA scale; perception of stigma measured with specific instruments; and social participation. Designs with longitudinal follow-up of at least 3 months were prioritized.

The exclusion criteria eliminated narrative reviews, editorials, letters to the editor, and single-case reports. Studies with mixed populations where leprosy-specific outcomes could not be extracted independently, exclusively pharmacological interventions without a rehabilitation component, and studies without validated measurement instruments were excluded (16).

Selection process

The selection process was carried out in three sequential phases by two independent reviewers. The first phase consisted of the initial screening of titles and abstracts, eliminating duplicates and clearly irrelevant studies. The second phase involved the review of the full text using a standardized form that documented the specific reasons for exclusion. The third phase consisted of the final quality assessment and data extraction. Discrepancies were resolved by consensus; when agreement could not be reached, a third reviewer was consulted. The process was documented using a PRISMA flow diagram (14).

Data extraction

Data extraction was performed using a standardized double independent extraction table. Bibliographic characteristics (author, year, country, database), methodological design (type, follow-up, sample size), population characteristics (age, sex, operational classification, initial degree of disability), detailed description of the intervention (type, duration, frequency, professionals, context), comparator group (when applicable), assessment instruments, and main results expressed as means with standard deviations or proportions, as appropriate, were captured. Discrepancies were resolved by consensus before analysis (17).

Methodological quality assessment

The risk of bias was assessed according to the design of each study. For randomized trials, RoB 2.0 was used (16); for non-randomized and observational studies, ROBINS-I was used (17). This tool assesses seven domains: (D1) pre-intervention confounding; (D2) participant selection; (D3) classification of interventions; (D4) deviations from planned interventions; (D5) missing data; (D6) outcome measurement; (D7) selection of reported outcomes.

Evidence summary

The evidence synthesis was conducted using a structured narrative approach. Given the marked heterogeneity of the included studies in terms of interventions, populations, measurement instruments, and follow-up periods, no quantitative meta-analysis or statistical pooling of estimates was performed. The numerical results reported in this review correspond to the individual estimates from each primary study, presented with specific attribution to the source, without deriving cross-study weighted averages. This decision is methodologically consistent with the integrative review framework (15). The results were organized by intervention modality and outcome of interest.

RESULTS

Selection of studies

The initial search identified 428 bibliographic records published between January 2020 and March 2026. Fifty-two duplicates were removed using automated bibliographic management software. Of the 376 unique records, 298 were excluded after review of titles and abstracts for the following reasons: absence of rehabilitation interventions, mixed populations without specific leprosy data, inadequate methodological designs, and lack of validated instruments. Seventy-eight full texts were retrieved for detailed evaluation. Finally, 67 studies did not meet the inclusion criteria: 28 did not include rehabilitation interventions but only pharmacological treatment; 19 lacked standardized measures of quality of life or functionality; 12 had a follow-up period of less than 3 months; 5 included exclusively pediatric populations without age stratification; and 3 did not report sufficient data for extraction. Eleven primary studies that met all the predefined inclusion criteria were included (Figure 1).

Characteristics of the included studies

The 11 studies included a total of 1,555 participants with a confirmed diagnosis of leprosy (Table 1). Of these, 892 were male and 663 were female. The mean age was 48.3 years, ranging from 18 to 78 years (8). The geographical distribution mainly covered low- and middle-income countries with a high burden of leprosy: India contributed 4 studies, Brazil 2, Nigeria 2, Nepal 2, and Japan 1 (4,12,18).

The methodological designs were distributed as follows: 6 studies were cross-sectional observational; 4 adopted a pre-post design without a control group, with follow-up periods between 3 and 12 months; and 1 corresponded to a non-randomized controlled clinical trial comparing community versus hospital rehabilitation for 6 months.

Most studies showed a moderate risk of bias according to ROBINS-I, with the most affected domains detailed in Table 2. In summary: the studies by Liyanage et al. (19) and Xu et al. (20) showed a moderate risk primarily in D1 (residual confounding due to uncontrolled socioeconomic variables) and D6 (lack of evaluator blinding in subjective outcomes). The studies by Nugraheni et al. (12) and Omobowale et al. (18) showed a moderate risk in D2 (non-random selection of participants in specialized centers) and D3 (heterogeneous classification of multicomponent interventions). The studies by Chen et al. (8) and Chen and Shui (2) showed a moderate risk in D1 and D7 (selective reporting of secondary outcomes). No study achieved a high-risk classification in the overall assessment. The only study with a non-randomized controlled trial design (5) was assessed with RoB 2.0 in the relevant domains, with an overall moderate risk. No study reported losses to follow-up greater than 20% (2).

Rehabilitation interventions identified

The interventions were classified into four modalities according to their predominant component. Several studies implemented multicomponent approaches that combined two or more modalities; this characteristic prevented the exclusive attribution of effects to a single component.

Physical rehabilitation was implemented in 7 of the 11 studies (12,20). It included therapeutic exercises for the recovery of muscle strength and joint range of motion, physiotherapy techniques for the management of neuropathic pain and contractures, customized orthoses for hands and feet, and gait and functional mobility training. The duration varied between 8 weeks and 6 months, with a frequency of 2 to 5 weekly sessions of 45 to 90 minutes, supervised by physiotherapists specializing in neurological sequelae of leprosy (19).

Psychosocial rehabilitation was present in 5 studies (9,18). It encompassed self-help groups with cognitive restructuring techniques, individual counseling for the management of anxiety and depression, and education on rights and anti-discrimination legislation (10). The duration ranged from 3 to 9 months, with weekly or bi-weekly sessions of 90 to 120 minutes.

Occupational rehabilitation was reported in 4 studies (5). It focused on training in instrumental activities of daily living adapted to individual limitations, the provision of assistive devices, and facilitating reintegration into the workforce.

Community rehabilitation was described in 3 studies (12). It included self-care programs supervised by community health workers in homes, monitoring of adherence to preventive routines for plantar ulcers, group health education and social mobilization for the reduction of discrimination (9).

Measuring instruments used

The WHOQOL-BREF questionnaire was applied in 6 studies (5,19), assessing four domains—physical, psychological, social relationships, and environment—on a transformed scale from 0 to 100. The SF-36 was used in 3 studies (5), covering eight dimensions of general health. The WHO-DAS II was used in 2 studies to measure functioning in six disability domains.

Physical functioning was assessed in 4 studies using the SALSA scale, which quantifies limitations in vision, mobility, self-care, manual dexterity, and manual labor, classifying them into categories from no limitation to extreme limitation (11). Perceived stigma was measured with the EMIC Stigma Scale in 3 studies (9), exploring self-stigma, experienced stigma, and anticipated stigma. The Participation Scale was used in 2 studies to assess restrictions in social participation (18).

Effects on quality of life

Pre-post studies using the WHOQOL-BREF individually reported improvements in the physical domain after 6 months of rehabilitation. Liyanage et al. (19) reported an increase of 12.4 points (from 51.2 to 63.6) in a sample of Sri Lankan patients undergoing structured physical rehabilitation.

Nugraheni et al. (12) observed an improvement of 8.1 points in the environmental domain, correlated with greater access to health services and a reduction in architectural barriers. Both studies reported statistically significant changes ($P < 0.05$) with their respective dispersion data, although weighted confidence intervals between studies were not available due to the synthesis design. In the psychological domain, Nugraheni et al. (12) reported increases of 9.8 points (from 54.7 to 64.5), reflecting a reduction in negative feelings and an improved self-image. Social relationships showed the most modest improvement, with an increase of 6.3 points in the study by van ‘t Noordende et al. (9) (from 48.9 to 55.2), suggesting that social stigma requires more intensive and sustained interventions for its reversal.

In studies that used the SF-36, Xu et al. (20) reported improvements in physical function with standardized mean differences of 0.68 between pre- and post-intervention measurements, and Omobowale et al. (18) documented increases in mental health with differences of 0.61. These estimates correspond to the individual studies and do not represent a weighted synthesis between studies.

Effects on physical functionality

Studies that assessed functionality using the SALSA scale documented significant improvements in the self-care and mobility subdomains. Barcelos et al. (5) reported a reduction in severe or extreme limitation from 34.2% at baseline to 18.7% after 4 months of physical and occupational rehabilitation. In the self-care subdomain, Liyanage et al. (19) observed that 42% of participants achieved complete independence at the end of the program, compared to 23% at baseline. In the area of mobility, Nugraheni et al. (12) reported that 38% reached the "no limitation" category, compared to 19% at baseline. Regarding the manual dexterity and hands-on work subdomains, Menaldi et al. (11) found that functional limitations in manual activities were significantly correlated with occupational status ($P < 0.001$), and that overcoming these functional barriers was associated with greater employment opportunities, including the resumption of craft, sewing, and agricultural work. Participants in multiple studies reported greater ability to perform daily activities such as dressing, bathing, preparing food, and moving independently (20).

Effects on stigma and social participation

Perceived stigma showed significant reductions following psychosocial interventions. Van ‘t Noordende et al. (9) reported a 24% decrease in EMIC Stigma Scale scores after 6 months of participation in self-help groups and individual counseling, with self-stigma being the component that showed the greatest reduction. Omobowale et al. (18) observed reductions in self-stigma of up to 32% in their Nigerian sample, while experienced stigma decreased by 18% and anticipated stigma by 21% in the included studies that differentiated these components. These estimates reflect the findings of individual studies and are not derived from a weighted quantitative synthesis across studies.

Social participation improved consistently. Nugraheni et al. (12) reported that the percentage of participants with severe restrictions on the Participation Scale decreased from 46% to 28% after community interventions. Participants described increased attendance at social, religious, and community events, and less self-imposed social isolation (9).

Factors associated with better results

Narrative analysis of prognostic factors identified consistent patterns across studies. Female participants reported more pronounced improvements in psychological quality of life, which could be attributed to greater participation in support groups and better adherence to psychosocial interventions (19). Patients under 45 years of age experienced superior functional recovery in strength and endurance activities (12). Level 1 disability at baseline was associated with greater absolute functional gains than level 2, underscoring the importance of early interventions (2). Multibacillary operational classification correlated with greater improvement in perceived stigma following group interventions (18), and higher than primary education was identified as a predictor of better adherence to self-care (20).

The community-based approach was associated with greater sustainability of benefits at 12 months compared to hospital programs: Sanchez et al. (4) reported that community participants maintained 78% of functional gains versus 54% of participants in hospital programs. Studies integrating physical and psychosocial rehabilitation reported larger effect sizes for overall quality of life and social participation compared to unimodal interventions (5,9,12).

DISCUSSION

Comprehensive rehabilitation programs produce clinically relevant improvements in the quality of life of people with disabilities secondary to leprosy when they combine physical, psychosocial, occupational, and community interventions (12). The benefits are consistently greater when implemented early, with a multidisciplinary approach, and with active community participation (9). The methodological heterogeneity of the included studies prevents a weighted quantitative synthesis and requires that each numerical estimate be interpreted within the context of the primary study from which it is derived (15). The predominance of observational designs with a moderate risk of bias and the absence of high-quality randomized controlled trials limit the generalizability of the results (10).

The improvements reported individually by the pre-post studies—with increases in the WHOQOL-BREF physical domain ranging from 8 to 14 points out of 100—represent perceptible changes that were positively valued by the patients (5). Participants reported greater independence in daily activities (19), a reduction in chronic pain (12), and partial recovery of compromised muscle strength (20). These findings are consistent with the literature on rehabilitation in chronic neurological diseases, where structured physical therapy interventions demonstrate functional benefits with small to moderate effect sizes (2,4).

The mechanisms underlying the observed benefits involve interrelated processes at the neuromuscular, biomechanical, and neuroplastic levels (11). Intensive physical rehabilitation promotes the maintenance of joint range of motion through passive and active stretching, preventing the formation of fibrous adhesions and contractures (19). Muscle strengthening stimulates compensatory hypertrophy of the remaining innervated fibers, optimizing motor recruitment patterns (12). Repetitive training of functional tasks facilitates cortical reorganization through neuroplasticity (2), a process widely documented in neurological rehabilitation, although direct evidence in leprosy using functional neuroimaging has not yet been established (4).

At a psychological level, participation in self-help groups and individual counseling mitigate social isolation (9), modify negative beliefs about one's own abilities, and promote self-efficacy, resulting in greater adherence to preventive self-care for ulcers (18). Education about the mechanisms of tissue injury empowers patients to adopt active protective behaviors (10), a phenomenon established in models of behavioral change in health.

Reducing stigma is particularly relevant from a health equity perspective (9). People affected by leprosy face multiple forms of intersectional discrimination (18). Stigma operates on three interdependent levels: public stigma, manifested through discriminatory attitudes from neighbors, employers, or service providers (9); experienced stigma, consisting of concrete episodes of rejection (19); and self-stigma, which leads to shame and decreased self-esteem (9,18).

Group psychosocial interventions address these three levels simultaneously (12), creating safe environments for validating experiences, demystifying misconceptions about contagiousness (5), and strengthening skills for assertively confronting discrimination (9). However, the sustained reduction of stigma requires structural transformations that include anti-discrimination legislative reforms (9), social protection policies (4), and mass campaigns that modify deeply rooted collective imaginaries (20).

The main methodological limitations are as follows. First, the restriction to three databases (PubMed, LILACS, and SciELO), excluding Embase, Scopus, and the Cochrane Library, reduces the sensitivity of the search and may exclude high-quality clinical trials or literature published in languages other than Spanish, English, and Portuguese. This introduces potential publication bias and limits the comprehensiveness of the evidence mapping. Second, the methodological heterogeneity among the included studies—in terms of interventions, populations, instruments, and follow-up times—prevented a weighted quantitative synthesis, limiting the precision of the estimates. Third, the moderate methodological quality of the primary studies—with a predominance of observational designs, an absence of randomized control groups, and a lack of blinding of evaluators in subjective outcomes—introduces uncertainty about the true magnitude of the benefits in the face of concurrent factors such as expectation effects or natural history. Fourth, the closure of the search in March 2026 implies that studies published in the final months of the period may lack the analytical maturity of works with a longer period of dissemination and citation. Fifth, the scarcity of cost-effectiveness data makes it difficult to formulate health policy recommendations (10).

Strengths include the search in databases with specific coverage of Latin American and Asian literature on leprosy, the independent double extraction with consistency verification, the rigorous and standardized evaluation of the risk of bias domain by domain with ROBINS-I and RoB 2.0 (16,17), and the structured narrative synthesis with individual attribution of each numerical estimate to its primary source.

In conclusion, comprehensive rehabilitation programs that combine physical, psychosocial, occupational, and community components achieve clinically relevant improvements in quality of life, physical function, and social participation in people with disabilities secondary to leprosy. The benefits are consistently greater when interventions are initiated early, maintained for 3 to 6 months, and implemented by multidisciplinary teams in community settings. However, urgent investment is needed in multicenter randomized controlled trials, implementation studies with subgroup analyses by specific rehabilitation modality, and rigorous economic evaluations to guide public policy development. Comprehensive rehabilitation is not an optional add-on; it is an essential component of leprosy control programs. Without it, we perpetuate cycles of avoidable disability and social exclusion that contradict the fundamental principles of global health equity. The goal of "zero leprosy" will only be achievable when we guarantee not only bacteriological cure but also functional restoration, social reintegration, and full dignity for all affected individuals.

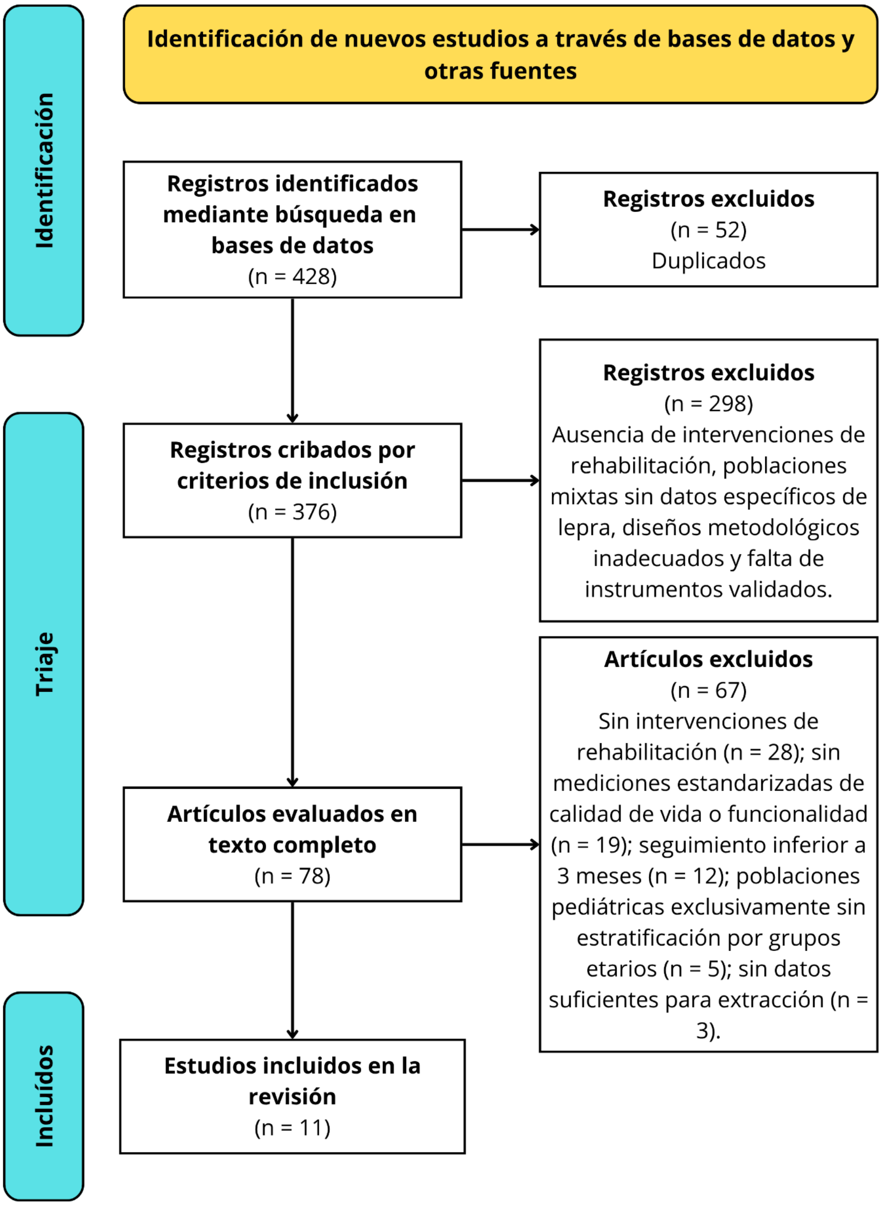

Figure 1.PRISMA flowchart.

Table 1. Aggregate characteristics of the included studies (n = 11)

Feature	n (%) media ± DE	Range/Detail
Number of studies included	11	—
Total participants	1 555	—
Geographic distribution		
India	4 (36,4 %)	—
Brazil	2 (18,2 %)	—
Nigeria	2 (18,2 %)	—
Nepal	2 (18,2 %)	—
Japan	1 (9,1 %)	—
Demographic characteristics		
Average age (years)	48,3	18–78
Male	892 (57,4 %)	—
Female	663 (42,6 %)	—
Methodological design		
Cross-sectional observational study	6 (54,5 %)	—
Pre-post study without a control group	4 (36,4 %)	3–12 months follow-up
Non-randomized controlled clinical trial	1 (9,1 %)	6 months
Monitoring duration		
Range (months)	—	3–12
Approximate median (months)	6	—
Type of intervention		
Physical rehabilitation	7 (63,6 %)	Physiotherapy, exercises, orthotics
Psychosocial rehabilitation	5 (45,5 %)	Support groups, stigma reduction
Occupational rehabilitation	4 (36,4 %)	AVD, assistive devices
Community rehabilitation	3 (27,3 %)	Self-care, health education
Multicomponent interventions	Most	≥ 2 combined modalities
Measuring instruments		
WHOQOL-BREF	6 (54,5 %)	Quality of life (4 domains)
SF-36	3 (27,3 %)	General health (8 dimensions)
WHO-DAS II	2 (18,2 %)	Disability and functioning
SALSA	4 (36,4 %)	Activity limitations
EMIC Stigma Scale	3 (27,3 %)	Perceived stigma
Participation Scale	2 (18,2 %)	Participation Restriction
Methodological quality		
Applied tool	ROBINS-I / RoB 2.0	According to the study design
Low risk	Minority	—
Moderate risk	Most	—
High risk	None	—
Loss to follow-up > 20%	0 (0 %)	—

Use: The percentages for each type of intervention add up to more than 100% because several studies implemented multicomponent interventions. ADL = Activities of Daily Living; WHOQOL-BREF = World Health Organization Quality of Life Brief; SF-36 = Short Form-36 Health Survey; WHO-DAS II = World Health Organization Disability Assessment Schedule; SALSA = Screening of Activity Limitation and Safety Awareness; EMIC = Explanatory Model Interview Catalogue; ROBINS-I = Risk of Bias in Non-randomized Studies of Interventions.

Table 2. Risk of bias assessment by ROBINS-I domain (pre-post and observational studies, n = 10)

Study	D1	D2	D3	D4	D5	D6	D7	Global
Liyanage et al. (2021)	M	L	L	L	L	M	L	M
Xu et al. (2023)	M	L	L	L	L	M	L	M
Nugraheni et al. (2023)	L	M	M	L	L	L	L	M
Omobowale et al. (2025)	L	M	M	L	L	L	L	M
Chen et al. (2021)	M	L	L	L	L	L	M	M
Chen y Shui (2022)	M	L	L	L	L	L	M	M
van 't Noordende et al. (2020)	L	L	L	L	L	M	L	L-M
Menaldi et al. (2022)	M	L	L	L	L	L	L	M
Sanchez et al. (2021)	L	L	L	L	L	L	L	L
Araujo et al. (2024)	L	L	L	L	L	L	L	L

Abbreviations: D1: Confusion; D2: Selection; D3: Classification; D4: Deviations; D5: Missing data; D6: Measurement; D7: Report; L: Low; M: Moderate. **Use:** Barcelos et al. (2021) corresponds to a scoping review evaluated with criteria adapted from the JBI. D1–D7: domains of the ROBINS-I tool (Sterne et al., 2016). The classification was performed independently by two reviewers.

Financing: The authors declare that they did not receive external funding for this study.

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