

410 CODES GROUPED INTO 63 DEFINED CONTENT CATEGORIES

Layer	Category	Definition	No. of Codes	Codes	Code frequency
Academic	Knowledge gaps in published data/information	The available, published literature has an absence or severe lack of knowledge, certain concepts and specific outcomes	3	Absence of published data Long term outcome unclear Uncertainty about impact of intervention	21 6 1
Academic	Limited context-specific data	Information, data, analyses etc. specific to the context are lacking, scarce or limited	2	Development of context-specific rehabilitation required Scarcity of context-specific information	8 23
Academic	Participant compensation strategies	These compensation/reimbursement aspects were published as strategies/considerations in the setting	2	Compensation for study participation Refreshments are offered	5 4
Academic	Participant compliance challenges	Intrinsic factors that may lead to compliance challenges within the study sample	1	Lack of compliance - intrinsic	2
Academic	Participant recruitment and retention challenges	Challenges described with regards to retaining participants in the study	3	Difficulty transporting participants Lack of compliance - extrinsic Logistical barriers Unreliable contact details	1 2 7 4
Academic	Participant recruitment and retention strategies	Plans of action designed to achieve recruitment and retention of study participants	6	Community awareness activities were arranged Door-to-door recruitment Information about free public community activities was provided Participants transported to study facility Research personnel recruits participants Village wide announcement by village head used for recruitment	1 2 1 2 2 1
Academic	Research Funding Challenges	Funding challenges pertaining to the research design or ability to obtain/maintain funding for research	4	Funding for travel and research provided by individual fundraising of the research team High cost programmes less inviting for large upscale studies Organisational funds used Research funding challenges	1 1 4 2
Academic	Setting-specific research design challenges	The setting creates challenges to "gold standard" methodology	7	Adverse ground realities Ground reality Oral consent due to low literacy	1 1 1

				Randomization not possible - ethical constraint	1
				Randomization not possible - geographical constraint	2
				Restricted array of outcome measures	1
				Social factors	1
Academic	Setting-specific research design used	The research design/methodology incorporated an approach tailored to the setting because the setting's specific status required it	13	Adverse ground realities	1
				Consent and assent read to participants	1
				Culturally appropriate approach used	20
				Help from philanthropic organisation	1
				Oral consent is the standard for research	1
				Patients received a smartphone	1
				Real-world care	1
				Sensitivity to differences between environments	1
				Therapy adapted to suit the setting	2
				Use of easy-to-use outcome measures	1
				Use of local language	26
				Use of simple materials	11
				Village wide announcement by village head used for recruitment	1
Community	Challenges with internet/mobile access	Access to internet/mobile connectivity is limited, lacking or unavailable due to cost, lack of necessary infrastructure or devices	7	High cost of internet connections	1
				Internet access dependent on mobile connectivity	1
				Internet access is problematic	1
				Lack of mobile connectivity	1
				Limited internet resources	1
				Most internet usage is via mobile networks	1
				Poor internet quality	2
Community	Cultural Influences	Cultures, traditions and beliefs influence a community's practices, experiences and expectations	7	Cultural and social views of disability	2
				Cultural barriers	1
				Cultures and beliefs	3
				Girls marry before the age of 18	1
				Misinformation	1
				Traditional medicine is used	4
				Unique cultural characteristics	1
Community	Difficulties in obtaining and/or retaining employment	Employment opportunities are lacking, limited and difficult to maintain for able-bodied and disabled citizens within the community setting	8	Employment opportunities are decreased for people with disabilities	1
				High unemployment rates	6
				Inaccessibility and inflexibility of the work and workplace	1

				Lack of access to income-generating programs Lack of access to vocational skills Lack of adequate employment/self-employment programmes Lack of disability-adjusted employment Struggles in finding adequate employment	1 1 1 1 1
Community	Disease burden	Impact of a health problem on a given population	1	High disease burden: Community	3
Community	Environmental challenges	Challenges created by the natural world and/or the impact of human activity on its condition	13	Environmental barriers Environmental factors Environmental problems Exposure to air pollution Marginalised areas Non-highly urbanised Physical and ecology dynamics/contexts differ Reluctance of patients to travel to research or health facility Rural area Semi-urban area Travel time to facility Urban area Villages	1 2 1 1 1 1 1 26 1 2 5 6
Community	Geographical challenges	Challenges created by the physical features/aspects of an area	9	Geographic proximity to facility is a barrier to engaging in activity Geographical adversities Geographical isolation Natural disasters Remote area Technological battery life and durability affected by setting Transport/travel over rough terrain Travel distance to service provider Tropical environments	2 4 1 1 10 1 5 5 1
Community	Increasing internet/mobile access	Emerging use of/access to internet/mobile connectivity	4	Access to mobile phone Emerging use of mobile technologies Internet access increasing Use of computers increasing	5 4 1 1
Community	Indigenous community structures	Native structure of certain communities	4	Indigenous population Non-tribal groups	1 1

				Specific ethnic populations	8
				Tribal groups	1
Community	Inequality in community structures	Inter-communal inequality where categories of people are attributed an unequal status in relation to other categories of people – extended by inequality in rights, decisions and opportunity	19	Community dwelling residents/participants	3
				Demographic transition	2
				Different pathologies to Western World	2
				Different socio-economic status to Western World	1
				Disadvantaged patients	1
				Epidemiological transition	1
				High-risk populations	1
				Lack of disability-adapted curriculums	2
				Low- to middle-class	1
				Low-income populations	1
				Many emergency surgeries	1
				Medically vulnerable populations	1
				Nutritional transition	1
				Overpopulation	1
				Poorer socio-economic conditions for the disabled	1
				Social inequality	1
				Sociodemographic barriers	1
				Transitional society	1
				Underserved areas	6
Community	Lack of basic services	The lack of infrastructure and resources hinders the community's access to education, health care, water, sanitation, housing and other basic amenities	19	Dirt limited technological use	1
				Informal housing	1
				Lack of a safe environment	1
				Lack of access to a toilet	1
				Lack of connection to electrical grid	1
				Lack of reliable electricity	1
				Lack of safely piped drinking water	1
				Limited transportation	1
				Living in unhygienic conditions	1
				Low-cost housing scheme	1
				Need for adapted transport	2
				Not able to exercise alone	1
				Outdoors	1
				Physical barriers	3
				Poor or non-existent roads	1
				Single-room dwellings	1

				Township	1
				Travel done on foot	1
				Unpaved surfaces	1
Community	Low education levels Basic education needs are not met within the community/setting	Basic education needs are not met within the community/setting	7	Basic education challenges	1
				Education options are limited	1
				Educational problems	1
				Lack of access to education	1
				Lack of disability-adapted curriculums	2
				Lack of education	6
				Low education levels	6
Community	Minority groups	Groups of people who, because of their physical or cultural characteristics, are observed or treated as different	1	Racial/ethnic minority	3
Community	Socio-economically disadvantaged	Intra-communal background of poverty and limited opportunity	18	Contexts of high inequality	1
				Economic problems	2
				Economically challenged	1
				Economically distressed	1
				Limited access to health insurance	3
				Low economic development	1
				Low socio-economic status	5
				Medically vulnerable populations	1
				Poor social backgrounds	1
				Poorer socio-economic conditions for the disabled	1
				Poverty	14
				Resource-poor populations fare worse than others	1
				Social factors	1
				Social problems	2
				Socio-economic barriers	2
				Socio-economic status	1
				Socioeconomically disadvantaged	1
				Uninsured patients	5
Interpersonal	Discrimination and stigma	When people are seen or treated differently/negatively because of their underlying conditions	5	Discrimination against disability	3
				Disease-related stigma	10
				Isolated from others	3
				Public transport is problematic	1
				Resort to alternative forms of treatment	1

Interpersonal	Insufficient social support	The patient's social network does not offer sufficient support to help them manage their condition	4	Defining/understanding social dynamics High strain on patient support system Insufficient social support /understanding Participation is time consuming for support persons	2 1 9 1
Interpersonal	Lack of family involvement	Family unable/unwilling to support/ be involved in patient's pathology due to logistical, financial or personal reasons	3	Family discouragement Lack of family assistance because they work to earn a living Time constraints	1 1 7
Interpersonal	Lack of resources for caregivers	Caregivers lack resources (financial & educational) to be able to fulfil their duties	2	Lack of caregiver support - financial Lack of caregiver support - tools or skills	1 3
Interpersonal	Language barriers	Language and communication barriers are created due to a lack of education/exposure	3	Language barriers between professionals and patients/participants No therapists available who speak the mother tongue of the patients Patients were encouraged by the use of lay language	2 1 2
Interpersonal	Negative effects on caregiver well-being	Caregiver's responsibilities have negative effects on their health and well-being	3	Caregiver health affected High strain on patient support system Lack of caregiver support - emotional/psychological	1 1 3
Interpersonal	Sufficient social support	The patient's social network offers sufficient support to help them manage their condition	2	Defining/understanding social dynamics Sufficient social support	2 3
National	Demographic transition	Changes in an area's patterns of mortality, fertility and growth rates (can be in opposite directions)	5	Demographic transition Developing world Least-developed Non-Western settings Socio-economic meltdown	2 10 1 2 1
National	Dependency on government involvement in healthcare provision	Government's (mainly financial) role in healthcare provision is pivotal in meeting the needs of a nation	13	Facilities are state funded Government subsidies used Lack of funding at local and national level Limitations of service delivery Little financial support from the government Need local stakeholder engagement No disability grants Organisations not well-equipped Patients rely on subsidised healthcare	2 1 1 1 1 3 1 1 1

				Population relies on age or disability grants Population relies on healthcare provided by the state Regulation enforcement is weak Research conducted by governmental organisation	3 1 1 1
National	Disease burden	Impact of a health problem on a given population	1	High disease burden: National	22
National	Economic variability	As economies tend to fluctuate, different aspects (income, revenue, supply and demand) introduce a measure of variability within and amongst national economies	6	Catastrophic financial costs Commerce dependent on mobile technologies Global economy more and more driven by technological advance Internet use increasing Poverty Socio-economic meltdown	1 1 1 1 14 1
National	National healthcare service delivery challenges	Challenges (financial, infrastructural, resources etc.) specified as national obstacles, limitations, problems etc. to service delivery within the health system	9	Chronic underfunding of public health system Health infrastructure challenges Healthcare related problems Inequities in the health sector Lack of institutions for specific needs/disabilities Limitations of service delivery Paucity of adequate healthcare infrastructure Significant challenges to provision of assistive technology Very real limitations	1 1 1 1 1 1 6 1 1
National	NGO involvement is necessary	NGO involvement is needed to assist with funding for research and programme implementation	4	Implementation through non-profit organisations and settings Need local stakeholder engagement Reliance on donor funding Research conducted by non-governmental organisation	5 3 4 3
National	Political instability	Government instability or collapse due to conflicts or competition between political adversaries	4	Disenfranchised populations Ethnic conflict Post conflict regions Socio-political adversities	1 1 3 5
National	World bank income group	Countries/nations grouped by income group	4	Low- and middle-income countries Low-income country Low-income setting Upper middle-income country	11 4 3 1

Healthcare Organisational	Access barriers	Accessibility of certain services are restricted	22	Access services on inconsistent basis	1
				Accessing available waiver systems is troublesome	1
				Availability of rehabilitation is limited for those with disability	1
				Barriers to accessing health services	2
				Issues of access to rehabilitation services	3
				Lack of access to adequate healthcare	8
				Lack of access to material in accessible format	1
				Lack of access to specialised support services	5
				Limited access to continuous quality care	1
				Limited access to conventional drug treatments	1
				Limited access to health information and education	3
				Limited access to programmes	3
				Little rehabilitation on offer	1
				Logistical barriers	7
				Need for vocational training to adapt to new circumstance	1
				Not many outpatient departments in public hospitals	1
				Ongoing face-to-face physio rarely available	1
Outreach activities in communities are poor	1				
Poor accessibility of services	8				
Rehabilitation implementation is often not feasible	6				
Rehabilitation services are limited	4				
Specific interventions are rarely available	1				
Healthcare Organisational	Challenges with assistive devices	Challenges with obtaining and issuing suitable and appropriate assistive devices	5	Affordable assistive devices are required	3
				Assistive devices not suitable	3
				Lack of access to assistive devices	2
				Lack of access to assistive technology	2
				Significant challenges to provision of assistive technology	1
Healthcare Organisational	Challenges with physical resources	Acquiring and maintaining the physical resources to implement healthcare strategies is lacking	20	Certain tests not available in local facilities	3
				Correct equipment needed	1
				Delays in production of materials	1
				Ensuring privacy	2
				Equipment barriers	1

				Frustrations with reliability of equipment Ideal/appropriate assistive device may not be available Investigation/testing equipment was out of order Issues with durability of technology Lack of disability-specific materials Limited access to emergency equipment Materials not in working order Materials were outdated Necessary equipment not available Paucity of adequate healthcare infrastructure Resource availability drives rehabilitation service Scarcity of instructional media Scarcity of resources Technological resources are scarce Technology not available at multiple sites	1 1 1 1 2 1 1 1 2 6 3 1 3 2 1
Healthcare Organisational	Communication gaps	Communication (e.g. health education and information, language use, handover/referral etc.) between and across patients, healthcare providers, healthcare environments and stakeholders is lacking	10	Communication across care environments is lacking Health education delivered via radio programs Inconsistent or incomplete documentation Lack of care co-ordination Lack of continuity of care Language barriers between professionals and patients/participants Limited access to health information and education No information provided on their disease type/profile No therapists available who speak the mother tongue of the patients Patients lack skills and knowledge to manage their conditions	1 1 1 4 2 2 3 1 1 7
Healthcare Organisational	Facility limitations	Appropriate and equipped healthcare facilities are non-existent, scarce, lacking or inadequate	14	Finding appropriate public buildings Hybrid model of provision of rehabilitation services Incontinency in facility "equippedness" Lack of appropriate rehabilitation space Lack of facilities No laboratory facilities	1 1 2 2 5 1

				No private clinics Not attending facilities Paucity of adequate healthcare infrastructure Resource availability drives rehabilitation service Scarcity of resources Structural barriers Sufficient treatment space needed Surgical techniques unavailable	1 1 6 3 3 1 1 1
Healthcare Organisational	Financial constraints	Constraints, limitations and gaps with regards to financial affordability of offering an optimal healthcare system	14	Catastrophic financial costs Cost of modern technology is limiting Effective program implementation is costly Finance shortages in healthcare sector Financial barriers Healthcare expenditures are out of pocket High cost of interventions High cost of managing disease Issues with cost of technology Lack of funding to acquire appropriate materials Limited funds Organisational funds used Rehabilitation is not affordable Unaffordable healthcare services	1 1 1 2 2 2 1 8 1 1 1 4 1 6
Healthcare Organisational	Heavy burden of care	Burden of care is overwhelming to the available healthcare providers for reasons such as lack of human resource, lack of support, lack of skills, high disease burden etc.	11	Areas staffed by few therapists Burden on healthcare providers Catastrophic human costs Compensation eased the burden of study participation Heavy case load High patient-provider ratio Labour intensive Long queues at hospitals Overextended clinicians Reliance on volunteers Time constraints	1 6 1 2 2 5 1 1 1 1 7
Healthcare Organisational	Insufficient technological resources and support	Technological resources are difficult to acquire and maintain	15	Cost of modern technology is limiting Frustrations with reliability of equipment Getting technical support in case of equipment is difficult Guidance and support needed in deploying	1 1 2 1

				technologies Issues with durability of technology Issues with easy transport of technology Lack of infrastructure to support specialised technologies Lack of technological logistics Need for appropriate rehabilitation technologies Need for low-cost technology solutions Need for rugged, easy-to-use technology Ready supply of spare parts not available Scarcity of resources Technological resources are scarce Technology not available at multiple sites	1 1 1 1 1 1 1 1 1 3 2 1
Healthcare Organisational	Lack of trained professionals	Shortage of available trained/skilled staff, personnel, human resource etc.	17	Effective program implementation needs resources Few available therapists Health education delivered by volunteers Human resource limitations Inadequate composition of the healthcare team Informal rehabilitation Lack of human expertise Lack of professional resources Lack resources to deal with growing epidemic Limited access to trained local health care providers Limited supervision available Resource availability drives rehabilitation service Scarcity of resources Shortages in available care management personnel Tapping into unrealized human resources Task shifting Training of volunteers	1 1 1 2 1 1 1 2 2 17 1 3 3 11 17 11 7
Healthcare Organisational	Local healthcare system gaps	Missing aspects or gaps within the healthcare system leading to failure to administer standard care	15	Certain tests not available in local facilities Health system gaps Healthcare often delivered through "safety-net" organisations Implementation gaps	3 1 1

				Inadequate follow up Large gap between health and treatment Necessary equipment not available No drug stores/pharmacies No information provided on their disease type/profile No institutional support No laboratory facilities No private clinics Rehabilitation/resources not available outside urban areas Severe disability not catered for Surgical techniques unavailable	3 1 1 2 1 1 1 1 1 5 1 1
Healthcare Organisational	Providers lack adequate skills and knowledge	The available healthcare providers lack the necessary knowledge and skills to administer and maintain healthcare strategies	6	Administrators lack skills Attitudinal barriers Healthcare providers lack disease-specific knowledge Healthcare providers lack required skills Limited access to health information and education Surgical techniques unavailable	1 1 7 3 3 1
Healthcare Organisational	Scheduling considerations	Timing and scheduling of healthcare services needs to be considered to ensure adequate treatment time and patient satisfaction	3	Adequate treatment time ensures patient satisfaction Time constraints Timing of rehabilitation adjusted to suit the setting	1 7 2
Healthcare Organisational	Suboptimal quality of care	Quality of care existing is below standard	30	Available interventions are of poor quality Barriers to delivering the gold standard Deterioration of healthcare delivery Difficulties in provision and support of care Dire situation Focus of healthcare sector is an issue Health system failure Health systems are ill-equipped to deliver high-quality services High numbers of undertreated patients Improper medical management Inconsistence of service delivery	5 1 2 1 1 1 1 1 1 5 1

				Issues with accessibility of services	1
				Issues with compliance of training	1
				Lack of protocol driven care	2
				Lack resources to deal with growing epidemic	2
				Limited access to continuous quality care	1
				Limited services offered to outpatients	1
				Little rehabilitation on offer	1
				Malpractice	1
				Misinformation	1
				Most effective service delivery model not identified yet	1
				Need for vocational training to adapt to new circumstance	1
				Organisations not well-equipped	1
				Outreach activities in communities are poor	1
				Poor satisfaction with services	1
				Private, non-profit free clinic	1
				Quality primary healthcare challenges	1
				Structural barriers	1
				System malfunction	1
				Weak health systems which cannot cope	1
Personal	Access to technology	Technological resource acquisition varies in type and availability	6	Access to mobile phone	5
				Computer access was problematic	1
				Give participants DVD players	1
				Limited access to modern technology	1
				Limited prior computer experience	2
				Patients received a smartphone	1
Personal	Financial Hardship	Unavailable, limited, inconsistent etc. access to funds/finances to afford basic amenities and services	29	Compensation eased the burden of study participation	2
				Cost of travel	5
				Discontinuation of medication/treatment	1
				Economic barriers	1
				Financial affordability	2
				Financial barriers	2
				Financial challenges	1
				Financial constraints	3
				Financial dependence	1
				Financial problems	1
				Hardship in affording medications	1

				Healthcare expenditures are out of pocket	2
				High cost of internet connections	1
				Hold public insurance	1
				Insufficient funds for healthcare	1
				Lack of means	1
				Limited access to health insurance	3
				Limited financial means	1
				Low material wealth	1
				Low-income patients	8
				Medical funds have run out	1
				No finances	1
				Obstacles imposed by poverty	1
				Poverty	14
				Reliance on family members work to sustain households	2
				Tests were too expensive	1
				Trouble sustaining life for themselves and their families	1
				Unaffordable healthcare services	6
				Uninsured patients	5
Personal	Grants	Use of government subsidised grants	1	Population relies on age or disability grants	3
Personal	Influence of individual characteristics	Each person's unique personality/individual characteristics affects or influences the way in which they approach, perceive or experience their health rehabilitation	7	Discontinuation of medication/treatment	1
				Ensuring privacy	2
				Lack of compliance - intrinsic	2
				Perceptions of encounters with providers	3
				Poor satisfaction with services	1
				Prefer professional healthcare workers	1
				Reluctance of patients to travel to research or health facility	1
Personal	Lack of awareness	Lack of knowledge or perception of a situation or fact	3	Lack of awareness	13
				Patients lack skills and knowledge to manage their conditions	7
				Poor healthcare-seeking behaviours	3
Personal	Low education levels	Below-average level of common knowledge about basic things that people would need to function in daily life (e.g. spelling, reading, writing, maths etc.)	7	Illiteracy	7
				Lack of education	6
				Literacy difficulties	1
				Low education levels	6
				Low literacy	12

				Low numeracy rates Oral consent due to low literacy	1 1
Personal	Low health literacy	A lacking ability to process and understand health information needed to make health decisions	1	Low health-literacy	3
Personal	Pathological variance	Pathologies and their complications differ between individuals	5	Different pathologies to Western World High prevalence of complications Impaired defence against damage Occupational biomechanical factors Physical barriers	2 5 1 1 3
Personal	Psychosocial challenges	Challenges to the interrelationship between social factors and personal thoughts, feelings and actions	4	Psychological barriers Psychosocial factors Social barriers Social problems	1 1 2 2
Personal	Subsistence/"blue collar" type employment	Employment related to the production of goods which are predominantly for own household use and livelihood or employment related to manual labour	7	Earn a living through agriculture Heavy manual lifting/work Households rely on subsistence agriculture Manual labour in demand Occupational biomechanical factors Peasant farming Unable to work	2 2 2 1 1 1 1
Personal	Time constraints	Lack of time limits or controls what you one can do	1	Time constraints	7
Personal	Transport issues	Issues with obtaining transport for travel from one place to another	3	Public transport is problematic Reliance on public transport Transport difficulties	1 1 7
Personal	Undernutrition	Lack of proper nutrition, caused by not having enough food or not eating enough food containing substances necessary for growth and health.	3	Food scarcity Hunger Poor nutritional status	1 1 1