Iran J Public Health, Vol. 49, No.9, Sep 2020, pp.1597-1610

**Review Article**

# A Framework for National Rehabilitation Policy and Strategies in Iran: A Scoping Review of Experiences in Other Countries

***Nahal AHMADZADEH** [1], ***Farbod EBADI FARD AZAR** [1], **Hamid Reza BARADARAN** [2], **Reza Salman ROGHANI** [3], **Marzieh SHIRAZIKHAH** [4], **Mohammad TAGHI JOGHATAEI** [5], **Nasibeh ZANJARI** [6], **Maziar MORADI-LAKEH** [7], **Sadaf SANEH** [8], **Saiedeh BAHRAMPOURI** [9]*

1. *Health Management and Economics Research Center, Iran University of Medical Sciences, Tehran, Iran*
2. *Department of Epidemiology, School of Public Health, Iran University of Medical Sciences, Tehran, Iran*
3. *Physical Medicine & Rehabilitation Research Center, Shahid Beheshti University of Medical Sciences, Tehran, Iran*
4. *Social Determinants of Health Research Center, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran*
5. *Department of Anatomy and Neuroscience, Cellular and Molecular Research Center, School of Medicine, Iran University of Medical Sciences, Tehran, Iran*
6. *Iranian Research Center on Aging, University of Social Welfare and Rehabilitation Sciences, Tehran, Iran*
7. *Preventive Medicine and Public Health Research Center, Psychosocial Health Research Institute, Iran University of Medical Sciences, Tehran, Iran*
8. *School of Medicine, Iran University of Medical Sciences, Tehran, Iran*
9. *Health in Emergency and Disaster Research Center, University of Social Welfare & Rehabilitation Sciences, Tehran, Iran*

***Corresponding Author:** Email: Ebadifardazar.f@iums.ac.ir

**(Received 16 Feb 2019; accepted 13 Apr 2019)**

**Abstract**

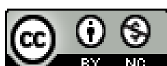
**Background:** The main objective of this study was to review the goals and programs of rehabilitative care in different countries to achieve a framework for a national operational plan for expanding rehabilitation services in Iran.

**Methods:** In this qualitative study (scoping review), national rehabilitation documents were reviewed in a selected list of countries. We searched several databases including Web of Science, PubMed, Scopus, and Google Scholar and main website such as WHO. Then, the review results were presented to a panel of experts to receive their feedback and opinion for a framework of national rehabilitation policy and strategies in Iran.

**Results:** In the preliminary phase, 1775 documents were found and 17 documents were selected from Asia, Europe, three islands near Australia, America, and Australia continents. National policies and programs regarding rehabilitation could be categorized in three fields: 1) Removing the barriers to access rehabilitative health services, 2) strengthening and improving rehabilitation, relevant appropriate technologies, Supportive Services, and Community Based Rehabilitation, and 3) Collecting international data on social support and improving the quality of research and services related to rehabilitation.

**Conclusion:** To achieve a successful national rehabilitation framework in any country, it is required to strengthen information and research database, implement annual monitoring of policymaking, assess the next year rehabilitation needs of society, finding causes of disabilities for effective planning.

**Keywords:** National policy; National strategy; Iran; Rehabilitation



Copyright © 2020 Ahmadzadeh et al. Published by Tehran University of Medical Sciences.
This work is licensed under a Creative Commons Attribution-NonCommercial 4.0 International license
(https://creativecommons.org/licenses/by-nc/4.0/). Non-commercial uses of the work are permitted, provided the original work is properly cited.

## Introduction

According to the 2011 report of WHO, more than one billion people have different types of disabilities. According to the 2011 census results in Iran, 1.4% of the population has a severe disability, of which 63% are male and the most common disabilities are mental disorders and foot defects (1). In Iran, the prevalence of disabilities is growing due to the significant increase in the elderly population (with a 3.6% annual growth rate) (2), increasing trend of chronic diseases, survived veterans of war, high rate of road injuries (Iran has one of the highest rates of road traffic injuries in the world), and high incidence of natural disasters.
In Iran, rehabilitation services are provided at various levels:
Inpatient services, Outpatient services, Day-care centers, Residential centers, and Community Based Services (CBS). However, the provision of services by institutions and different organizations are not well coordinated. In this regard, there is not a well-established and systematic interaction between different components of service provision. For instance, there is no functional referral system and integrated services for this purpose. Therefore, one of the most important characteristics of an efficient health system is to provide high-quality services at any time and any place to the people who need it.
The structure and functions of service provision are different between the countries. Nevertheless, the health system needs to an integrated structure to perform well on financing, providing trained healthcare personnel, and offering reliable information and evidence for health policymaking. Tertiary prevention and rehabilitative care is an essential part of health services for each population. Global burden of disease (GBD) has increased between 1990 and 2017 for many disabling permanent conditions such as prevalence of blindness and vision impairment (from 12,634 to 15,622 per 100,000), hearing loss (from 13,454 to 17,242 per 100,000), spinal injuries (from 247 to 294 per 100,000), and amputations (from 4,208 to 4,861 per 100,000). Moreover, non-communicable diseases such as stroke and cardiac event that need specialized rehabilitation services are still increasing in most countries (3).
Considering the increasing need and demand for rehabilitation services, and the importance of integrated and comprehensive coverage of rehabilitative services for the general population, the present study was conducted to review the goals and programs of rehabilitative care in different countries to provide a framework to a national operational plan in order to expand rehabilitation services.

## Methods

In this qualitative study, first, national rehabilitation documents were reviewed in a selected list of countries. Then, the review results were presented to a panel of experts to receive their feedback and opinion for a framework in Iran. The current report is limited to the findings of the first section; i.e., the scoping review.
In order to review the patterns of rehabilitation services, a scoping review was performed as a qualitative study (4). This phase had five steps: 1) Identifying the research questions, 2) Identifying all relevant studies, 3) Selecting study type, 4) Charting the data, and 5) Collating, summarizing, and reporting the results. Each step was explained briefly as follows:
To the expert panel and in a meeting, the following three questions were asked:
Based on the experiences from different countries, in your opinion, what are the best policies and recommended plans for Iran to the following three goals?

1- Removing barriers in the health services and plans
2- Rehabilitation and required technology, supportive services, and community-based rehabilitation (CBR)
3- Collecting internationally comparable data and supporting studies on disability and related services

Based on experts' opinions, WHO framework and National Rehabilitation Framework were suggested for reviewing.

### 1. Identifying the "review" question

The main review question was as follows: "What are the contents of national rehabilitation programs and types of policies in different countries?"

### 2. Identifying all relevant studies:

In this study, an electronic search was performed. This search was conducted using a pre-defined protocol. We searched different databases including Web of Science, PubMed, Scopus, and Google Scholar.

In addition, the website of WHO as an official and reliable source of data for national policies of different countries was reviewed. We used the following search strategy in PubMed and adjusted it for other databases:

((policy [Title/Abstract] OR program [Title/Abstract]) OR strategy [Title/Abstract]) AND (rehabilitation [Title/Abstract] OR disab*[Title/Abstract]) AND national [Title/Abstract])

To increase the sensitivity of the searching process and finding important grey literature, we also performed a search on Google. We did not limit the search to a specific time. Documents directly related to national policies and strategies of rehabilitative care of different countries were included. Studies published in languages other than English and Persian were excluded.

### 3. Selection of studies for data extraction

In the initial search, we found 1,775 documents. After removing duplicated studies, the remaining 1,258 studies were screened based on their title/abstract.

At this stage of screening, 1,220 articles were deleted. In the next step, 20 articles were eliminated due to lack of access to the complete documents and similarity in the disability framework. Eventually, 17 documents met the eligibility criteria of this study from Asia, Europe, America, and Australia continents, as well as three islands near Australia to include them in the synthesis phase.

## Results

A summary of national policies and programs regarding rehabilitation is presented in Table 1. These programs and policies are categorized into 3 different fields: 1) Removing the barriers to access rehabilitative health services, 2) Strengthening and improving rehabilitation, relevant appropriate technologies, Supportive Services, and Community Based Rehabilitation, and 3) Collecting international data on social support and improving the quality of research and services related to rehabilitation.

**Table 1:** Summary of national policies and programs related to the Rehabilitation Programs in Selected Countries

| *Countries* | *Policy approaches* | *Programs/Plans/Strategies* |
|---|---|---|
| South Korea (5, 6) | Improving the quality of life | 1- Removing barriers and providing equal conditions (G1) (10 G1, G2, and G3 were identified by experts as those goals of other countries in line with the goals of the WHO<br>2- Development of job opportunities (G1)<br>3- Integration of rehabilitation services in the health system (G2)<br>4- Early detection of disabilities through the implementation of screening programs (G2)<br>5- Development and expansion of regional rehabilitation hospitals regionally (G2)<br>6- Development of community-based rehabilitation (G2) |

| | | |
|---|---|---|
| India (7) | Participation in society | 1- Removing cultural (G1)<br>2- Development and implementation of screening programs (G2)<br>3- Expansion of rehabilitation hospitals/units/departments (G2)<br>4- Development rehabilitation interventions and consultation services (G2)<br>5- Development of assistive technology (G2)<br>6- Capacity building of human resources (G2)<br>7- Development of insurance (G2)<br>8- Development of vocational training (G2)<br>9- Implementation of Residence and Rehab (R & R) projects for homeless people (G2) |
| Pakistan (8, 9) | Increasing opportunities | 1- Advocacy for legal protection/support for policy document (G1)<br>2- Removing physical environment barriers (G1)<br>3- Improving public acceptance (G1)<br>4- Development of rehabilitation hospitals /outpatient clinics (G2)<br>5- Setting up rehabilitation units in all teaching hospitals (G2)<br>6- Expansion of medical rehabilitation services for physical and occupational rehabilitation (G2)<br>7- Expansion of orthopedic groups in hospitals (G2)<br>8- Support and development of spinal cord injury rehabilitation for veterans (G2)<br>9- Training the rehabilitation (G2)<br>10- Providing prevention program (G2)<br>11- Identification and early intervention (G2)<br>12- Development and strengthening special education (G)<br>13- Training and service provision (G2)<br>14- Access to information, technology, and communications (G2)<br>15- Providing education for self-employment and economic rehabilitation (G2)<br>16- Sports and exercise programs (G2)<br>17- Enhancement of support for non-governmental organizations (NGOs) (G2)<br>18- Integration of available services between the capital and the provinces (G2)<br>19- Increasing the capacity for production of assisted technologies (G2)<br>20- Determining prevalence and causes of disability (G3) |
| Afghanistan (10) | participation in social and economic | 1- Poverty reduction and increasing social security (G1)<br>2- Early identification/detection interventions (G2)<br>3- Dissemination of information for access to facilities (G3)<br>4- Development of counseling (G2)<br>5- Development of auxiliary equipment (G2)<br>6- Development of comprehensive rehabilitation centers (G2)<br>7- Development of sensory vision rehabilitation services (G2)<br>8- Supporting self-help groups and their family associations (G2)<br>9- Supporting women and children with disabilities (G1)<br>10- Empowerment-based on CBR approach (G2)<br>11- Identification and early intervention in infants (G2)<br>12- Rehabilitation based on/according to standard rules in the context of policy making (G1)<br>13- Development of self-employment skills (G2)<br>14- Facilitating access to environment and transportation system (G2)<br>15- development of home and community care (G2)<br>16- Facilitating access to information and communications (G2)<br>17- Development of life skills programs (G2)<br>18- Development of sports and leisure time related to a disability (G2)<br>19- Cooperation with National Institutions, regional networking (G2)<br>20- Policymaking monitoring and disability Assessments (G3) |

| | | |
|---|---|---|
| Botswana (11) | Full and comprehensive support | 1- Paying attention to community participation/involvement for effective processes (G1)<br>2- Screening for individuals to the hospital (G2)<br>3- Introducing rehabilitation equipment/facilities on a small scale and referral to hospitals (G2)<br>4- Strengthening CBR services (G2)<br>5- Helping non-governmental organizations (NGO) (G2) |
| Tanzania (12, 13) | Intersectoral collaboration for providing necessary care | 1- Creating the Comprehensive Community-Based Rehabilitation in Tanzania (CCBRT) Center (G2)<br>2- Caregiver training to rehabilitation Services Provision (G2)<br>3- Development and acceptance of CBR (G2)<br>4- Participation of people with disabilities in sports (G2)<br>5- Creating public awareness to accept family responsibilities caring (G2) |
| Gambia (14) | Empowerment, removing barriers and enhancing the quality of life | 1- defining the civil rights, and increasing the participation of people with disabilities (G1)<br>2- Establishing the National Community Based Rehabilitation (G2)<br>3- Design of an organized referral system to provide services (G2)<br>4- Notifying about service provider and services (G2)<br>5- Development of rehabilitation centers in villages (G2)<br>6- Leisure and sports programs and collaborative learning (G2) |
| South Africa (15, 16) | Provision of coherent social services | 1- Enhancing intersectoral collaboration (G1)<br>2- Assigning sufficient resources (G1)<br>3- Ensuring the delivery of services (G2)<br>4- Self-assertiveness rights (G1) and enhancing their access to facilities (G1)<br>5- Connecting to existing/available rehabilitation programs at community or institute level (G2)<br>6- Establishing and maintaining a close collaboration system with a variety of services health (G2)<br>7- Development of interdisciplinary care (G2)<br>8- Development of community-based strategies (G2)<br>9- provision of day care services (G2)<br>10- preparation and training of auxiliary equipment (G2)<br>11- Strengthening the support system (G2)<br>12- Integration and social inclusion (G2)<br>13- Family Participation and involvement in programs (G2)<br>14- Development of communication policies for service information (G2) |
| Canada (17-21) | Health development, safety, and support | 1- Providing charge-free rehabilitation for hospitalized patients<br>2- focus on orthopedic rehabilitation (G2)<br>3- Development of insurance in outpatient rehabilitation of workers (G2)<br>4- Provision of personal home care services (G2).<br>5- Controlling diabetes to prevent disabilities (G2)<br>6- Development of "veterans independence programs (G2)<br>7- Development of Veterans Affairs Canada (VAC) (G2)<br>8- Development of "treatment benefit program" (G2)<br>9- Providing a "Canadian health network" to get nessesary information (G2) |
| The United States of America (22-25) | Development of rehabilitation at all levels of the health system | 1- Removing access barriers by providing information to people (G1)<br>2- Development of rehabilitation services including physiotherapy,etc (G2)<br>3- Providing health service for outpatients in clinics, inpatient wards, and nursing home (G2)<br>4- Establishing outpatient clinics and providing social and psychological services (G2)<br>5- Providing rehabilitation insurance services (G2)<br>6- Providing occupational rehabilitation services and psychological and CBR (G2)<br>7- Creating a proper referral system with skilled staff (G2)<br>8- Using assessment instrument Inpatient Rehabilitation (G2) |

| | | |
|---|---|---|
| Australia (26-28) | Avoiding discrimination especially for the employment | 1- Provision of appropriate schedule plan/program, (G1)<br>2- Developing a culture of attracting/hiring/recruiting individuals (G1)<br>3- Development of medical services in different settings (G2)<br>4- Provision of specialized rehabilitation (G2)<br>5- Provision of job services for people with a disability<br>6- Informing all staff familiar with the experiences and lives of individuals with disabilities (G2)<br>7- Training managers how to manage and support employees (G2)<br>8- Creating job opportunities for people with disabilities (G2)<br>9- Occupational rehabilitation service provision for individuals with disabilities (G2) |
| United Kingdom (29-32) | Social inclusion and integration of individuals | 1- Improving the public transportation surfaces (G1)<br>2- Development of services in the hospital, home, rehabilitation centers, and other empowerment/rehabilitation units (G2)<br>3- Provision of special services for example, in mental health (G2)<br>4- Paying attention to children's special educational needs (G2)<br>5- Creating a job for youth/young people with disabilities (G2) |
| Sweden (31) | Building a society where people with disability can participate fully in their communities and life | 1- Provision of services to achieve maximum functional performance (G1)<br>2- Providing rehabilitation programs (G2)<br>3- Development of regional municipal services (G2)<br>4- Training people in service giving (G2)<br>5- Interdisciplinary collaboration with full cooperation (G2)<br>6- Development of high-cost support systems (G2) |
| Germany | Welfare based on a self-centered person | 1- Government support for employing (G1)<br>2- Acting in accordance with social rehabilitation in rehabilitation organizations (G1)<br>3- Removing access barriers through citizen friendly policies (G1)<br>4- Development of rehabilitation services (G2)<br>5- Provision of support by the municipality about rehabilitation services (G2)<br>6- Holding rehabilitation workshops for persons with disabilities (G2) |
| Bermuda (33) | Community participation for all | 1- Creating community-based nursing services (G2)<br>2- Holding 4-week courses for cardiac rehabilitation (G2)<br>3- Development of a health care system (G2)<br>4- Training and support people with disability (G2) |
| Vanuatu's islands (34) | Equal rights | 1- Development of sports and educational services (G1)<br>2- Participation of people with disabilities in the decision-making process (G1)<br>3- Development of CBR (G2)<br>4- Support of diabetes communities (G2)<br>5- Creating healthy villages (G2)<br>6- Development and service provision (G2)<br>7- Strengthening and developing improvement self-help (G)<br>8- Promotion of self-help organizations for families with disabilities(G2)<br>9- Policymaking by organizations related to disabled (G2)<br>10- Enhancing consulting services at various organizations (G2)<br>11- Establishing a review panel policy on a national scale (G3) |

| | | |
|---|---|---|
| Cook Islands (35, 36) | Development of rehabilitation rights | 1- Examining the achievements in gaining social and psychological skills (G1)<br>2- Development of long-term rehabilitation (G2)<br>3- Development of medical rehabilitation programs in disasters (G2)<br>4- Strengthening and development of referral systems (G2)<br>5- Cooperation with other care systems (G2)<br>6- Cooperation with the emergency response system (G2)<br>7- Strengthening the health system Infrastructure (G2)<br>8- Encouraging a healthier lifestyle and a safe environment (G2)<br>9- Development of health services (G2)<br>10- Establishment of Regional Rehabilitation Centers (G2)<br>11- Organizing, strengthening, and expanding integrated rehabilitation services (G2)<br>12- Development of employment and job training (G2)<br>13- Increasing the opportunities for small enterprises (G2)<br>14- Development of Community based Nursing Services (G2)<br>15- Strengthening statistical information system (G3) |

### *Summarizing findings from the selected studies*

Most of the national strategies cover the second goal of the WHO (i.e., strengthening and developing rehabilitation, required technology, support services, and community-based rehabilitation) while less attention has been paid to the first goal of the WHO in rehabilitation policymaking. Experiences from different countries in the rehabilitation domain (Table 1) are presented in the form of the conceptual framework in Fig. 1 for national policymaking. This framework is aligned with the aims of the WHO operational programs. As presented in Fig. 1, to achieve the goal on removing barriers, different following items were considered: giving access to public media, providing opportunities for self-expression in an empowered community, making physical environment and public transportation accessible and usable by people with disabilities, legal support (including mandatory rules) for employment of people with disabilities, encouraging public and private employers to hire them with help of entrepreneurs and rehabilitation knowledge transfer to the society to reduce negative attitudes and stigma toward it.

In the field of strengthening and expanding rehabilitation services, there are four main interventions including, 1) the development of rehabilitation technology, 2) development of training and management of rehabilitation system, 3) expansion of a variety of rehabilitation services, and 4) development of different levels of rehabilitation care.

Development of rehabilitation care levels is one of the most important issues in strengthening and expanding rehabilitation services. Rehabilitation services are provided at four different levels of services including inpatient services at the hospital, outpatient services, community-based services, and provision of rehabilitation services as a part of long-term and palliative care.

Inpatient services in hospital: Comprehensive and personalized services are provided to patients admitted to the hospital for recovery in independent daily activities in short term and health promotion in long-term. These services are provided by medical rehabilitation team after surgery, diseases, and injuries quickly through a coherent daily program.

Outpatient rehabilitation services: These services are provided to patients who do not admit to hospital or discharge from hospital to achieve a high level of functionality and independence in daily life after a disorder.

Community-based services: Community-based rehabilitation strategies are more effective especially in developing countries to improve the quality of life of people with disabilities and breaking the cycle of poverty. In community-based rehabilitation, a medical subset of rehabilitation is aligned with screening, prevention, promotion, and assistive technologies. In a CBR approach, services such as

community-based nursing, self-help organizations, and provision of self-care home services to improve independency are provided by a professional rehabilitation team. In this approach, the expansion of rehabilitation services into rural areas has been emphasized (37).

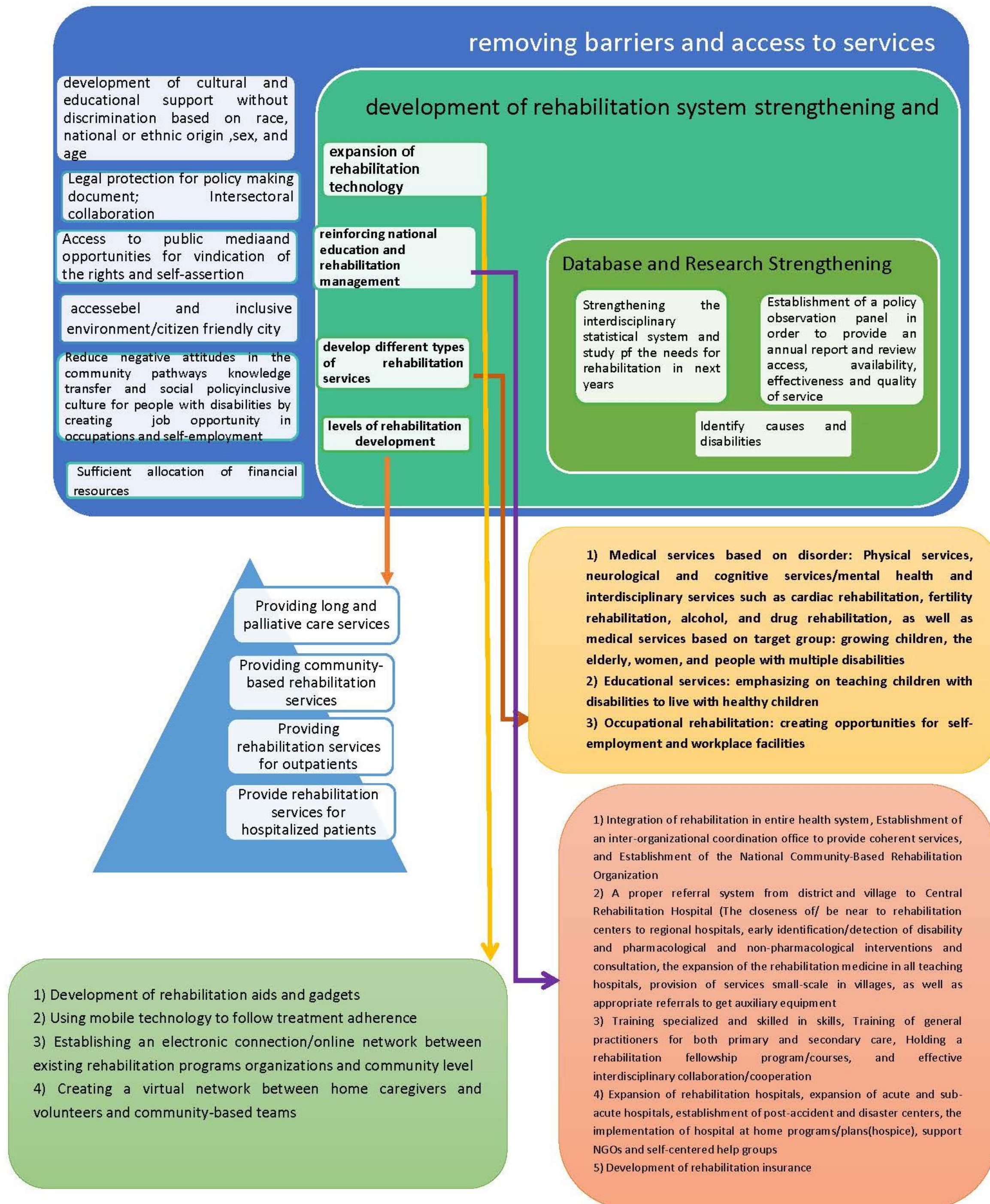



**Fig. 1:** The conceptual framework rehabilitation pattern based on goals of WHO

Long-term rehabilitation services and palliative care: Long-term rehabilitation services mainly target elder groups; for instance, individuals with pelvic fracture and dementia require long-term services and physical therapy.

In developing countries, there is a stronger emphasis on community-based services. In Afghanistan, for instance, Biwako Millennium Framework (BMF) was employed as a basis for the national policy (10). In countries such as South Africa, the CBR is designed based on the Kaplan organizational framework for the community in order to increase organizational capacity (15, 16). Community-based nursing is also used to promote the independence of people with disability through assisted living programs (38-40).

Rehabilitation services have been expanded from medical rehabilitation to other aspects of rehabilitation. Figure 1 provides a summary of diversity in rehabilitation services in different countries. The existing medical rehabilitation services include a wide range from common rehabilitation services to new services such as cardiac rehabilitation and fertility rehabilitation. These services are provided in two categories: disorder-based services and target groups based services. Disorder-based services cover a wide spectrum of services for physical disorders, neurological and cognitive/mental disorders, and interdisciplinary services.

Services for physical disorders include respiratory rehabilitation, musculoskeletal rehabilitation, post-stroke rehabilitation, spinal cord injury rehabilitation, orthopedic treatments and sport therapy, fall prevention, hand therapy, management of headache, lymphedema treatments, Stott Pilates, pain puzzle, vestibular rehabilitation, pelvic pain rehabilitation, urinary incontinence treatment, vision disorder rehabilitation, and new special training for people with severe hearing loss.

Services for people with neurological and cognitive or mental disorders include neurological rehabilitation for Parkinson's disease, Alzheimer's disease, dementia, brain tumor, stroke, and Guillain-Barre Syndrome, balance disorders, social skills, attention to clinical psychology and learning disorders, stress management programs, and assessment of learning capacity in people with mental disorders.

Interdisciplinary services such as cardiac rehabilitation (e.g., monitoring by a team composed of physical therapist, nurse and dietitian, stress management intervention, physical activity, smoking cessation, diet therapy, and restrictions for business of unhealthy oil, alcohol, and tobacco products), fertility rehabilitation in patients with disabilities, and rehabilitation services for dependence to alcohol and drugs. (33, 41-43).

In different countries, the Ministry of Health supports volunteer organizations such as the Diabetes Association to prevent future disabilities (34). In the rehabilitation for fertility and sexuality, specific groups of patients such as individuals with spinal cord injury are targeted and frameworks such as Sexual Rehabilitation Framework (SRF) are used in by an interdisciplinary team of psychologists and medical team (44). Drug and alcohol rehabilitation also requires an interdisciplinary team for the detoxification phase and family therapy for inpatient and outpatient cases (16). It is necessary to provide other types of rehabilitation along with medical rehabilitation. A variety of rehabilitation services is presented in the following:

- Empowerment/rehabilitation in leisure time: Participation of people with disabilities in sports activities, giving tickets of sports programs, travel allowance, and involvement in cultural activities
- Empowerment/educational rehabilitation: Paying attention to and meeting special needs of children with disabilities who attend next to healthy students, provision of cultural and educational services without discrimination to reduce poverty, and participation in the community for independent living with maximal functional capacity
- Empowerment/occupational rehabilitation: Supporting self-employment, creating opportunities for small businesses, creating opportunities for promotion at work, establishing an online system for understanding their needs in the organization,

and creating opportunities to access all facilities in the workplace

- Provision of services highly varies in different countries. For example, medical and educational rehabilitation are the main focus in developing countries while in more developed countries occupational rehabilitation and establishing communication networks have also been emphasized (31).

Provision of services at different levels requires accurate, coherent, and effective organizational management and training. To provide comprehensive rehabilitation programs in some countries such as Japan, rehabilitation services are integrated throughout the whole health system or there is an inter-organizational coordination office to provide coherent services (45).

Proper referral system from neighborhoods and remote rural areas and establishing a regional center for rehabilitation are among the most important topics. In the action plans, it is also emphasized to have rehabilitation centers close to the existing regional hospitals. Provision of home-based services has been more focused in countries such as the UK to make rehabilitation services accessible to everyone, especially to older adults in the community. Moreover, in a proper referral system, a specific referral track should be considered for providing assistive rehabilitation equipment. Training of specialized and skilled staff who are familiar with new concepts and methods of rehabilitation is also influential on effective management of medical rehabilitation systems. These skills can be provided in areas such as electrodiagnostic studies, urodynamic assessments, and amputee rehabilitation. Moreover, general practitioners have to be familiar with primary and secondary care and indications of Polypill, fixed-dose combinations of medications in rehabilitation service provision.

The expansion of rehabilitation hospitals is one of the strategies to manage infrastructures of a rehabilitation system. Regarding national income generation, countries such as India have invested in "health tourism" by establishing special rehabilitation hospitals with the provision of various comprehensive services (46). Countries such as the Cook Islands where natural disasters such as earthquakes occur with a high frequency have progressed in post-disaster rehabilitation (36) and establishment of paraplegic centers, physical and occupational rehabilitation after accidents/events and disasters.

In addition, technology can be considered as an important component to improve the efficiency of the rehabilitation system. In developed countries, such as Germany, Sweden, and the United Kingdom, rehabilitation technology gadgets increase the autonomy of people with disabilities in everyday life. In some countries, common devices such as mobile technology are also used to follow adherence to treatment (7).

The last and most important point in this regard, according to the third goal of the WHO, is that the whole rehabilitation system needs continuous monitoring so that health rights such as availability, accessibility, and effectiveness can be assessed and inappropriate functions can be searched and corrected. Certainly, it is necessary to monitor the rehabilitation system with precise instruments such as Inpatient Rehabilitation Facility-Patient Assessment Instrument (IRF-PAI) (47).

## Discussion

Based on the experiences from different countries, the ultimate goal of policy-making in rehabilitation is social inclusion and integration of people with disabilities and achieving well-being and individual agency.

In this regard, the goals in different countries are as follows:

- Provision of comprehensive support to people with disabilities
- Creating a society without barriers for participation of people with disabilities
- Freedom, equality, and dignity
- Independence in daily life

In developed countries such as Australia, the emphasis is on social inclusion of people with disabilities in the workplace and employment mainstream or, in Germany, entrepreneurs help people

with a severe disability. In comparison, in developing countries, society is built for people with disabilities to live independently in the community. Disability Friendly Cities with great ideas such as freedom, equality, and dignity were mentioned in the national disability reports worldwide. To achieve inclusion and social integration as a goal, it was needed to prepare the national context and the strategy and operational plans. The purpose of preparing context is to remove barriers to access to the following services:

1) Approval of the laws and rights for people with disabilities, self-expression, and legal support for policy implementation
2) Effective intersectional collaboration and interdisciplinary for diagnosis, treatment, and rehabilitation (between different sections of government organizations and volunteer groups) in order to strengthen health system infrastructure and develop supportive communities, strengthening intersectional statistical information system, and connect to existing rehabilitation programs at the institute or community levels
3) Preparing an inclusive environment with an emphasis on the significant role of the regional municipality (the existence of a suitable environment for leisure time, public transportation, and modify streets)
4) Changing community/workplace attitudes and non-discrimination against people with disabilities, non-discrimination on grounds of gender, ethnicity, religion, and age, and training managers to support employees with disabilities
5) Provision of sufficient budget allocates and resources for rehabilitation
6) Give access to public media for people with disabilities who are voiceless individuals in society

Preparing social context is one of the most important requirements for an inclusive community for people with disabilities. In developed countries such as Sweden, non-discrimination in society was expressed. Likewise, in a country such as South Korea, the existence of an efficient inter-sectional care system is one of the most important points. Rehabilitation facilities are provided on a smaller scale and, if necessary, the patients sometimes refer to the hospital. Preparing an inclusive environment is one of the essential areas of rehabilitation, wherein the role of municipalities is highlighted. In this social context, allocating budget for purchasing a wheelchair without creating a suitable recreational environment and access to public toilets leads to isolation of people with disabilities and lack of access to disability policy vision.

It is recommended removing rehabilitation barriers in the National Rehabilitation Documents and developing the hospital and community-based services with an emphasis on target groups such as children and elderly people. Medical rehabilitation to achieve an effective outcome needs to link other types of rehabilitation educational rehabilitation, occupational rehabilitation, and leisure time. By extending the rehabilitation services by new technologies such as gadgets or virtual networks, the exchange of information between people with disabilities and treatment group will become more effective.

### *Limitations*

The main limitation of the present study was the lack of access to the comprehensive national disability policy report of countries for detailed analysis of their rehabilitation policies.

## Conclusion

To achieve a successful national rehabilitation framework in any country, it is necessary to strengthen information and research database, perform annual monitoring of policymaking, assess next year rehabilitation needs of the society, and identify causes of disabilities for effective planning.

## Ethical considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission,

redundancy, etc.) have been completely observed by the authors.

## Acknowledgements

This study was based on PhD thesis of Ms Nahal Ahmadzadeh supported by Iran University of Medical Sciences. Authors would like to express their deep gratitude to the office of the Minister's Adviser on Rehabilitation Affairs for cooperation

## Conflict of interest

The authors declare that there is no conflict of interest.

## References

1. Sajadi H, Zanjari N (2015). Disability in Iran: Prevalence, Characteristics, and Socio-Economic Correlates. *J Rahabil* , 16 (1): 36-47.
2. Statistical Center of Iran (2011). Iranian population and housing census. www.amar.org.ir
3. Kadel R (2018). Global, regional, and national incidence, prevalence, and years lived with disability for 354 diseases and injuries for 195 countries, 1990-2017: a systematic analysis for the Global Burden of Disease Study 2017. *Lancet*, 392 (10159):1789-858.
4. Arksey H, O'Malley L (2005). Scoping studies: toward a methodological framework. *Int J Soc Res Methodol*, 8 (1):19-32.
5. Iverson RM, Reid ME (1992). Gravity-driven groundwater flow and slope failure potential: an elastic effective-stress model. *Water Resour Res*, 28 (3):925-38.
6. Chun C, Kim S, Lee J, et al (2009). Health systems in transition. Republic of Korea: Health System Review.11 (7).
7. Fernandes W, Velath PM, Kumar M, et al (2007). The draft national rehabilitation policy (2006) and the communal violence bill (2005). http://www.mcrg.ac.in/pp16.pdf
8. Government of Pakistan (2006). National Plan of Action 2006 to implement the National Policy for Persons with Disabilities. Ministry of Social Welfare and Special Education, The Pakistan. https://www.mindbank.info/item/1607
9. World Health Organization (2017). Rehabilitation 2030: a call for action. In Meeting report, Geneva. www.who.int/rehabilitation/rehab-2030-call-for-action
10. Italian Cooperation (2003). The comprehensive national disability policy in Afganistan. Afghan Digital Libraries. https://www.who.int/disabilities/policies/documents/Afghanistan.pdf?ua=1
11. Government of Botswana (1996). National of policy on care for people with disabilities. Ministry of health, The Botswana. http://www.gov.bw
12. Aldersey HM, Turnbull HR (2011). The United Republic of Tanzania's national policy on disability: A policy analysis. *Journal of Disability Policy Studies*, 22 (3): 160-169.
13. Government of Tanzania (2004). National policy on disability Tanzania. Ministry of labor, youth development and sport. www.moh.go.tz.
14. Godt JW, Baum RL, Lu N (2009). Landsliding in partially saturated materials. *Geophys Res Lett*, 36(2).
15. Mji G, Rhoda A, Statham S, et al (2017). A protocol for the methodological steps used to evaluate the alignment of rehabilitation services in the Western Cape, South Africa with the National Rehabilitation Policy. *BMC Health Serv Res*, 17 (1):200.
16. Government of Pretoria (2015). Policy on Disability. Department of Social Development, the Pretoria.
17. Campolieti M, Riddell C (2012). Disability policy and the labor market: evidence from a natural experiment in Canada, 1998–2006. *Journal of Public Economics*, 96(3-4), 306-316.
18. Marchildon G (2013). *Health systems in transition*. Canada: Health System Review. 15 (1):1-179.
19. McColl MA, Jaiswal A, Jones S, et al (2017). A review of disability policy in canada. http://www.disabilitypolicyalliance.ca/wp-content/uploads/2018/01/A-Review-of-Disability-Policy-in-Canada-3rd-edition-Final-1-1.pdf
20. Prince MJ (2008). Canadian disability policy: trends, reforms & implications for rehabilitation. UBC Medical Student and Alumni Centre: The Canada. https://www.uvic.ca/hsd/assets/docs/faculty/prince-michael/candispolicytrends.pdf

21. Social Development Canada (2006). Services for people with disabilities: a guide to the government of Canada services for people with disabilities and their families Canada. Income Security Program. www.publications.gc.ca
22. Beyer S (2016). Commentary on "Employment for all: United States Disability Policy". *Tizard Learning Disability Review*, 21 (3):162-164.
23. Rice T, Rosenau P, Unruh LY, et al (2013). Health systems in transition. United States of America: Health System Review. 15 (3):1-431.
24. Skempes D, Stucki G, Bickenbach J (2015). Health-related rehabilitation and human rights: analyzing states' obligations under the United Nations Convention on the Rights of Persons with Disabilities. *Archives of physical medicine and rehabilitation*, 96 (1):163-73.
25. Department of Health and Human Services (2011). Comprehensive Outpatient Rehabilitation Facility. The United States of America. https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/CertificationandComplianc/CORFs
26. Graham SK, Cameron ID (2008). A survey of rehabilitation services in Australia. *Aust Health Rev*, 32 (3):392-9.
27. Hallahan L (2015). Disability policy in Australia: a triumph of the scriptio inferior on impotence and neediness? *The Australian journal of social issues*, 50 (2):191-208.
28. Healy J, Sharman E, Lokuge B (2006). Health systems in transition. Australia: Health system review. WHO Regional Office for Europe: Copenhagen.
29. Cylus J, Richardson E, Findley L, et al (2015). Health systems in transition. United Kingdom: Health System Review. 17 (5):1-126.
30. Holloway F, Carson J, Davis S (2002). Rehabilitation in the United Kingdom: Research, policy, and practice. *Can J Psychiatry*, 47(7):628-34.
31. Committee on the Rehabilitation and Integration of People with disabilities (2003). Rehabilitation and integration of people with disabilities: policy and legislation. 7th ed. Council of Europe Publishing Editions du Conseil de l'Europe: Germany.
32. Royal College of (2010). Medical rehabilitation in 2011 and beyond. Report of a working party, London. https://www.bsrm.org.uk/downloads/medical-rehabilitation-2011-and-beyond.pdf
33. Baum RL, Godt JW, Z SW (2010). Estimating the timing and location of shallow rainfall-induced landslides using a model for transient, unsaturated infiltration. *J Geophys Res*, doi.org/10.1029/2009JF001321.
34. Nimbtik G. National disability policy and plan of action 2008-2015. Ministry of justice and social welfare and the national disability committee: Republic of Vanuatu.
35. Amatya B, Khan F (2016). Overview of Medical Rehabilitation in Natural Disasters in the Pacific Island Countries. *Phys Med Rehabil Int*, 3 (4), 1090.
36. Munokoa N (2008). National Policy on Disability & National Action Plan 2008 – 2012. Minister of Internal Affairs & Social Services: Cook Islands. 2-35.
37. World Health Organization (2014). Manual on Participatory Monitoring and Evaluation of Community Based Rehabilitation. https://www.who.int/disabilities/cbr/cbr_me_callforproposals/en/
38. Axelson HV, Lindén A, Andersson JE, et al (2016). Equalization and participation for all: Swedish disability policy at a crossroads. *Stud Health Technol Inform*, 229 :69-77.
39. Anell A, Glenngard AH, Merkur SM (2012). Health systems in transition. Sweden: Health system review. https://apps.who.int/iris/handle/10665/107738
40. Brodin J, Fasth A (2001). Habilitation, support and service for young people with motor disabilities. A Swedish perspective. *Int J Rehabil Res*, 24 (4):309-16.
41. National Heart Foundation of Australia (2007). Recommended Framework for cardiac rehabilitation. National Heart Foundation of Australia & Australian Cardiac Rehabilitation Association; Australia.
42. Madan K, Babu AS, Contractor A et al (2014). Cardiac rehabilitation in India. *Prog Cardiovasc Dis*, 56 (5):543-50.
43. Menezes AR, Lavie CJ, Milani RV, et al (2014). Cardiac rehabilitation in the United States. *Prog Cardiovasc Dis*, 56 (5):522-9.
44. Elliott S, Hocaloski S, Carlson M (2017). A multidisciplinary approach to sexual and fertility rehabilitation: The sexual rehabilitation framework. *Top Spinal Cord Inj Rehabil*, 23 (1):49-56.
45. Masoudi-Asl I, Nosrati-Nejad F, Akhavan-Behbahani A, et al (2011).Proposed model for

integrating health and social welfare system in Iran (a comparative study). *PAYESH*, 10 (1):115-121.
46. Singh JP (2015). Healthcare tourism in India: Opportunity and challenges. *Asian Journal of Multidimensional Research,* 4 (3):37-47.
47. Centers for Medicare & Medicaid Services (2012). The inpatient rehabilitation facility – patient assessment instrument (IRF-PAI) training manual. Centers for Medicare & Medicaid Services (CMS): Baltimore. https://www.cms.gov/medicare/medicare-fee-for-service-payment/inpatientrehabfacpps/downloads/irfpai-manual-2012.pdf