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Health services coverage: Physical access to rehabilitation facilities in Tehran compare with the country

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Abstract:

OBJECTIVE: According to the World Health Organization, estimates about 1,800,000 people lived with disability in Tehran. Against there is little evidence of physical access to rehabilitation facilities in Tehran. This study is aimed to assess the physical access to physical rehabilitation facilities in Tehran and compare it with the country.

METHODS: This is a cross-sectional study conducted since January to April 2017. We used a master facilities list of rehabilitation facility that developed in Iran to collect the information. The samples of this study included all existing physical rehabilitation centers in Tehran province. Data analysis was done using the SPSSr version 21.0 (SPSS Inc., Chicago, IL).

RESULTS: The results showed that rehabilitation facilities existed at different levels, including inpatient (10.51), outpatient (224.28), community based (36.72), and long-term care (4.96)/1,000,000 populations. Rehabilitation services are provided by rehabilitation professional including: Physical medicine and rehabilitation specialists (8.7), physiotherapists (132.89), occupational therapists (57.4), speech therapists (42.11), and audiologists (48.84) (in 1,000,000 populations).

CONCLUSION: Tehran needs to increase the physical access to rehabilitation facilities and compared with country was disproportionate physical access to facilities in most cases. It is necessary to establish an interdisciplinary referral system between different rehabilitation providers.

Keywords:

Access, facility, physical access, rehabilitation, rehabilitation professionals, Tehran

Introduction

Recently, growing rate of chronic diseases has become one of the serious concerns in Iran due to its aging population. There are various problems and issues in this country, which some of them can be listed as follows: Severe climate changes, high rate of road accidents, recurrent natural disasters, and a significant population of war veterans needing long-term care services. As a result, this country has a high rate of disability and needs long-term

programs for the provision of rehabilitation services and facilities.^[1,2]

In this country, we cannot observe an organized and accurate framework for the provision of rehabilitation services at various settings and organizations involved (e.g., Health and Medical Education, the Ministry of Welfare and Social Security, and Red Crescent Society).^[3-6]

Based on the WHO reports on disability (2011), 15% of the world's population (more than 1 billion people) are involved with different types of disability;^[7] based on

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this, it is expected that 15% of the population, or about 18,000,000 people, living in Tehran require rehabilitation services. Nonetheless, it is not clear how much the capabilities of rehabilitation centers in this municipality is and what is the role of various private and public facilities in this regard.

One of the important systems that provide the nationwide health care is universal health coverage, which “contains the wide spectrum of crucial health services, from health promotion to prevention, treatment, rehabilitation, and palliative care.”^[8] Physical access to service has been found as one of main prerequisites of health coverage; however, we face with shortage in data on the physical access to rehabilitation infrastructure and resources, both in public and private facilities.^[9]

This subject, i.e., the physical access to health care has been evaluated throughout the world. For example, a study conducted in 2009 assessed physical access to physical therapist and occupational therapists in Canada and reported that, on average, each 10,000 Canadians have access to about 4.8 physical therapists and 3.7 occupational therapists.^[10] A study in Bangladesh that assessed the availability of private and state-owned obstetric services in 64 districts of this country reported that, on average, every 500 000 Bangladeshis have access to 2.1 state-owned and 6.1 private obstetric facilities.^[11] The WHO developed “The Service Availability and Readiness Assessment.” In 2004, it is utilized to appraise the service availability and readiness and to roll up the data, which is necessary for supporting and managing a successful UHS.^[12]

Directing the national and regional policies toward improved service planning with better physical access and thus enhancing the quality of UHS requires reliable and scientific data scrutinizing the current capacities.^[13] In light of this need, the aim of this study was to acquire evidence regarding the physical access to the various types of rehabilitation services in Tehran to contribute to the improvement of future policies on health promotion, prevention, treatment, and rehabilitation in a timely people in the need of rehabilitation services.

Methods

This was a study of cross sectional that conducted January to April 2017. Data related to the existence of physical rehabilitation services in the different levels such as inpatient, outpatient, community-based, and long-term care samples of this study included all existing physical rehabilitation centers from public and private centers affiliated with the Ministry of Health and Medical Education, Ministry of Welfare and Social Security, and the Iranian Red Crescent Society to determine physical access to rehabilitation services in

Tehran province. Ethical approval was obtained from the University of Social Welfare and Rehabilitation Sciences Ethical Committee. We used a master facilities list of rehabilitation facility that developed by Shirazikah *et al.* in Iran.^[6] This list include all private and public providers, and nongovernmental organizations in all of the settings to collect the data, two interviewers were employed and were given appropriate educational training in a 2-hour session regarding the objectives of the study and on how to collect the data in accordance with the final list of existing rehabilitation services.

These interviewers collected the needed data by referring to the statistics department of the main organizations involved such as the Ministry of Health, the Deputy for Rehabilitation-Social Welfare Organization, the Deputy for the Treatment of the Red Crescent Organization, and the Deputy for Treatment on each three Medical universities in Tehran that affiliated with the Ministry of Health. Data analysis was done using SPSSr version 21.0 (SPSS Inc., Chicago, IL).

Results

Analysis of data related to the physical access to infrastructures and different rehabilitation facilities is shown in Table 1.

Table 1 indicates that in the inpatient level, 10.51 beds /1 million of the population have been allocated for two rehabilitation hospitals in Tehran. Majority of services available is related to the outpatient service which is 224.28 and community-based service which is 36.72/1 million of the population. In the outpatient department, majority of services are rendered in working offices and the facilities that have the highest frequency of services rendered are physiotherapy offices having 105.55/1 million of the population and the lowest frequency has been observed in day care rehabilitation center which is 1.63/1 million of the population. In the community-based level, 36.56/1 million of the total population have access to community-based rehabilitation centers and long-term care facilities, whereas 4.96/1 million of the total population have access to nursing home centers.

Table 2 showed that in the province of Tehran, the ratio of inpatient beds per 1 million population is 10.5, whereas the proportion of beds in the country per 1 million of the population is 1.68 which is usually concentrated in the city of Tehran. Furthermore, there is a density of physical medicine and physiotherapy clinics in the province of Tehran which is two times more than the total number in the country.

Regarding outpatient centers, the number of rehabilitation offices in Tehran has approximately

Table 1: The number of rehabilitation facilities per 1,000,000 populations in different service levels in Tehran

Level	Various facilities	Infrastructures	Number	Average facility per 1,000,000 population
Inpatient	Hospital	Bed/Number of Hospitals	128.2	10.51
Outpatient	General rehabilitation center	Number of center	30	2.44
	Physical medicine and rehabilitation offices	Number of clinic	77	6.36
	Physiotherapy offices	Number of clinic	1286	105.55
	Occupational therapy offices	Number of clinic	437	35.51
	Speech therapy offices	Number of clinic	354	28.76
	Audiology offices	Number of clinic	411	33.39
	Orthotics and prosthetics office	Number of clinic	98	7.96
	Day care rehabilitation center	Number of center	20	1.63
	Vocational training center	Number of center	33	2.68
		Total		2746
Community-based setting	Home health care rehabilitation center	Number of center	2	0.16
	Community Base Rehabilitation (CBR) center	Number bases	450	36.56
	Total			36.72
Long-term care	Nursing home	Number of centers	61	4.96

Table 2: The number of rehabilitation facilities per 1,000,000 populations in Tehran in comparison with Iran

Rehabilitation facility	Tehran	Iran
Rehabilitation bed	10.51	1.68
General rehabilitation center	2.44	1.14
Physical medicine and rehabilitation offices	6.36	3.01
Physiotherapy offices	105.55	48.90
Occupational therapy offices	35.51	13.42
Speech therapy offices	28.76	15.94
Audiology offices	33.39	14.16
Orthotics and prosthetics office	7.96	3.56
Day care rehabilitation center	1.63	3.41
Vocational training center	2.68	4.77
Community Base Rehabilitation (CBR) center	36.56	64.23
Home health care rehabilitation center	0.16	1.99
Nursing home	4.96	3.60

doubled, but the number of day care rehabilitation and specialized rehabilitation centers in the country compared to the province of Tehran indicated a very significant difference.

With regard to the services rendered by community-based center, the number of CBR center in Tehran province is 0.16 and 1.99 for the entire nation. Furthermore, in the long care rehabilitation center in Tehran, the number of day care rehabilitation centers is more in numbers in comparison to the number that exist throughout the country.

Table 3 showed that in the inpatient level, the highest share in services rendered is allotted to the Red Crescent Society while the Ministry of Health has the highest in terms of outpatient services. Community-based setting and long-term care rehabilitation services are rendered mostly by the Social Welfare Organization.

Figure 1 shows that there is the density of rehabilitation human resources in Tehran which is 2.5 times more than the total number in the country per 1 million population.

Discussion

The aim of this study was to determine the physical access to physical rehabilitation facilities in Tehran. The results of this study are presented in three parts.

Rehabilitation facilities

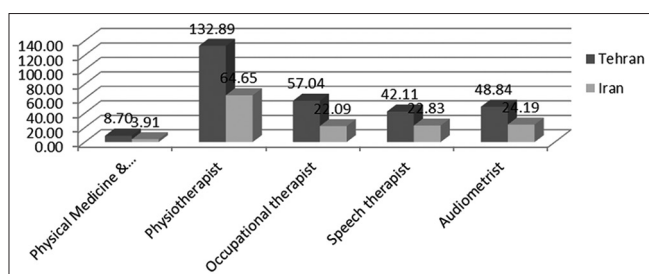
In inpatient setting, two hospitals in Tehran offers rehabilitation services and the ratio of rehabilitation beds per 1 million population is 10.51. However, only 35% of people with a stroke require hospitalization.^[14] The British Society of Rehabilitation Medicine has suggested as standard 60 beds for 1 million population.^[15] In Iran, especially in Tehran, the experience in establishing and conversion of rehabilitation hospitals is not least.^[16]

However, in recent years, especially in large cities as same as Tehran in overcoming the phenomenon of increased population growth, especially the increasing growth of the elderly population and the increase in the prevalence of noncommunicable diseases, these have led to the emergence of a variety of problems among patients requiring rehabilitation services.

In the outpatient setting, the existing facilities include comprehensive rehabilitation center, day care centers, and physical medical specialist's office, physiotherapy office, occupational therapy office, speech therapy office, audio therapy office, and orthotic and prosthetic office. Statistics regarding the centers mentioned above indicated that the highest number of existing facilities in the outpatient level are private offices, whereas the least number belong to the day care centers and comprehensive

Table 3: The number of rehabilitation facilities per 1,000,000 populations in different organization in Tehran

Rehabilitation facility	Ministry of Health and Medical Education	Red crescent society	State welfare organization
Rehabilitation bed	4.1	5.75	0
Physical medicine and rehabilitation office	6.356	0	0
Physiotherapy office	105.39	0.16	0
Occupational therapy office	35.505	0	0
Speech therapy office	28.762	0	0
Audiometry office	0	0	0
Orthotic and prosthetic office	7.962	0	0
Rehabilitation center	2.38	0.08	0
Day care center	0	0	1.625
Vocational center	0	0	2.681
Home care center	0	0	0.162
Nursing homes	0	0	4.956

**Figure 1:** The Number of human rehabilitation workforce per 1,000,000 populations in Tehran in comparison with Iran

rehabilitation services of which comprehensive and rehabilitation team services is preferred rather than individual services. According to the report given by the Health and Demographic America in 2013, the report stated that for every one million population in the United States, 14.9 day care rehabilitation centers are available to the public.^[17] Another important point is the presence of a defined referral system between rehabilitation centers^[18] for the reason that integrated rehabilitation services and consistent communication between the different service providers is of utmost importance,^[18] but unfortunately, this is one among the other weak points of the service provider system in Iran not only in the outpatient rehabilitation center but also in the other levels as well.

In the community-based level, in considering the results of the present study, it is not only this level of care that is directly facing the problem on the lack of home health care but other facilities as well that is needed to complete a chain of services which is unfortunately unavailable such as hospice care and respite care. In the United States of America, the number of available home rehabilitation facilities per 1 million of the population is 37.9 home care centers and 11.5 respite centers. However, the most important point is the provision of remarkable rehabilitation services in the form of community-based rehabilitation centers in a ratio of 64.228/1 million of the population. In the past three

decades, global attitude in the provision of services has changed from institutional to community-based rehabilitation services^[19] In Iran, initially, CBR was implemented in the form of Primary Health Care then the Social Welfare Organization took the responsibility in the continuation of this program in all provinces which gained an extensive coverage.

In the long-term care level, these services exist. Although rehabilitation approach is directed toward rendering services to disabled patients at their own residence, in some circumstances specifically with regard to the elderly, due to their lack of ability to solve their daily problems and in performing their own personal needs, therefore, the provision of residential facilities such as nursing home centers or residential care centers for disabled elderly becomes a necessity^[20] At present, in the United States of America for every one million population 48.8 nursing homes and 69 assisted living are available.^[17] However, another important aspect is that expanding nursing home centers in the city of Tehran instead of day-care centers and home care which appears in this regard, creation of necessary conditions for raising the public's attitude despite the provision of services at the patient's residence and also, health policy-makers should provide more support and give more attention in the success of community-based rehabilitation care.

Rehabilitation infrastructure in the city of Tehran in comparison to the country in terms of offices is approximately twice higher but the ratio in day care centers, vocational training centers, home care rehabilitation and CBR center, is exactly on the reverse but of course this issue on the other hand has bring with it some satisfaction in terms that community-based rehabilitation services has developed in other provinces in the country, but unfortunately on the other hand, in some provinces having the largest share of the population have only been accounted a tiny proportion of these services. This issue becomes clearer when we

realize that the number of nursing home centers in Tehran is twice the country and this confirms that in Tehran, nursing home centers has been rendered more than the outpatient services in a form of comprehensive and community-based rehabilitation services. In terms of the service provider organization's share, the largest share has been accounted to the Ministry of Health and Medical Education, but of course, the congestion of these facilities in this ministry is generally due to the presence of rehabilitation offices but by viewing the congestion of facilities in terms of comprehensive rehabilitation services, one can figure out that congestion of structures are basically related to the Social Welfare Organization and considering the organization's mission, these facilities are related to social rehabilitation services.^[21]

Human rehabilitation resources

Health workers are one of the important resources in the health system which renders services to the patients. However, in many national programs in the health sector, assessment regarding the human resources has been given less priority. In many countries and at a global level, information and evidence concerning rehabilitation human resources are inadequate and fragmented. This is partly due to the lack of common definition and classifications and the lack of available statistics, lack of necessary resources to monitor labor force and the lack of political motivation, especially in evaluating rehabilitation personnel.^[22] In Tehran, the ratio of physical medicine specialist for every one million population is 8.7. This ratio in comparison to the whole country is two times higher, whereas in the European Region, the ratio of specialist for every one million population is 12^[23] what is certain is that, in order to increase the quality and quantity of experts in this field, needed facilities such as patients beds, creation of infrastructures, and needed space necessary for establishing different rehabilitation centers equipped with trained rehabilitation personnel are vital and necessary.^[2,24] More important point is that at present, more important areas of rehabilitation especially in other disciplines such as neurology, orthopedics, and internal medicine are being made available at inpatient level to think that in Iran, research fellowship programs in Rehabilitation Medicine has not been defined and even in the course of General Medicine the field of rehabilitation has not yet been addressed. By generally looking at the results of the present study, we can see that with regard to other issues, the same is true with regard to human resources such as physiotherapy, occupational therapy, speech therapy, and audiologist; the number in Tehran is more than twice the number employed in comparison to the total number in the country. This congestion represents improper distribution within the country and the important point is to compare this ratio with other countries. A report published by the World Health

Organization in 2008 stated that in the United States of America for every 10,000 population, 5.5 physiotherapist is required, in Australia 5.3, in Canada 4.9, Great Britain 4.5, Panama 1.3, South Africa 1.3, Tunisia 1.2, Zambia 0.17, Indonesia 0.07, Uganda 0.04, Mali 0.03, and Burkina Faso 0.02, respectively,^[22] and in Iran, in 2015 the number has reached to 0.6. Furthermore, in the year 2000, in the United States of America, the ratio of occupational therapists and speech therapist per 100,100 population was 13.8 and 27.3.^[25] While in another study conducted in Canada in 2007, it has been reported that the ratio of physiotherapist and occupational therapists for every 10,000 population was 4.8 and 3.7, respectively.^[10]

Conclusion

The above statistics confirms that in our country and in Tehran, we are facing problems in terms of quantity and in terms of inappropriate distribution of human resources and on the other hand, as indicated in Figure 1. There is a contradiction between the needs of the society both within and between disciplines and at this point, the need to formulate policies and standards distinct for rehabilitation personnel as well as creating necessary structures and facilities for training and to make their works more visible.

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Conflicts of interest

There are no conflicts of interest.

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