

ORIGINAL ARTICLE



# Development and Validation of a Tool for Assessing Barriers to Participation in Team Sports for Women with Physical-Mobility Disabilities

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## ABSTRACT

**Background.** Creating proper contexts to maximize sport participation of women with physical-mobility disabilities requires identifying barriers to their participation. It is essential to develop a valid and reliable tool to identify existing barriers. **Objectives.** The aim of the present study was to develop and validate a questionnaire for assessing barriers to participation in team sports for women with physical-mobility disabilities. **Methods.** The data were collected through theoretical literature, observation and semi-structured interviews with experts and professors of disability sports and women with physical-mobility disabilities selected through purposeful and snowball sampling methods. The main barriers were identified and the questionnaire was then prepared. To carry out statistical analysis on reliability and validity of the tool using factor analysis, the above questionnaire was distributed among 300 statistical samples selected by proportional stratified sampling across the country. **Results.** Results of factor analysis showed that it was logical to maintain 10 factors that explained 65.5% of the total variance. All items had a positive contribution to overall reliability. **Conclusion.** The final questionnaire (10 factors and 48 questions) was developed that could be a reliable tool for future researches, the results of which can be used by disability sport administrators to adopt policies to ensure active sport participation of women with physical mobility disabilities.

**KEYWORDS:** *Sports Participation, Disabled Athlete, Team Sport, Barriers, Tool Validation.*

## INTRODUCTION

Disabled people live in all societies and are an integral part of each society. According to statistics released by the World Health Organization (WHO) (2011), more than one billion people in the world live with some form of disability, accounting for 10 - 15% of the world's population. WHO reports that 80% of people with disabilities live in developing countries. Previous studies on the living conditions of people with disabilities show that this group does not have access to basic living facilities such as health, housing, and education. In addition to being at

risk of their main problem, disabled people are more at risk for other health threat-related issues than non-disabled people. However, disabled women athletes have been able to gain the confidence needed to enjoy a high-quality life because of their individual achievements in sports. In many countries, there are opportunities for people with disabilities to demonstrate their abilities in the field of sports and physical activity at the public to championship level. However, such participation is not the same worldwide, and disabled people face major barriers in developing

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countries that limit access to and participation in sports and physical activity. To provide the conditions and requirements needed for the more active sport participation of women, the authorities should identify issues and problems in this regard through pilot tests. Sport and physical activities can affect the lives of disabled people (1). Diaz et al. (2019) investigated the effect of sport participation on the quality of life of disabled people (2). The results of a study by Lundberg et al. (2011) confirm the importance of the participation of disabled people in sport and physical activities (3). Researches (Cheung, Kim & Lee, 2015) showed that inactivity as a major health hazard can decrease disabled people's quality of life and functional independence, increase disability-related secondary risks, including obesity, cardiovascular diseases, hypertension, osteoporosis, and type 2 diabetes (4). Results of previous researches by Devries et al. (2012); Bakhtiari, Nourbakhsh, and Khodayari (2015); Devine (2016) showed that sport is a factor that helps disabled people attend the society and do their activities independently since it reduces their stress level, increase their morale, and improve their performance status (5-7). Harris's (2018) study indicated that exercise had a positive effect on the physical, mental, and social health of disabled people and showed a strong and positive correlation between increased physical activity and mental health status of disabled people (8). The results of previous researches by Townsend et al. (2018) and Caddick & Smith (2014) referred to higher levels of preparedness to attend the society, enhanced vitality and life expectancy, increased self-confidence, prevention of depression and boredom as the benefits of sport in the life disabled people (9, 10). For this reason, sport has been identified as one of the key pillars of the daily activities of disabled people and participation in sports and physical activities can be the best solution to reduce the problems of this segment of society.

Sports participation for non-disabled people is affected by various factors. It may be thought that these factors also influence sports participation of disabled people (11). It should be borne in mind that disabled people are physically different and it is important to pay attention to them as a separate group with specific needs and experiences. Achieving and maintaining health for disabled people, compared to other people, is not only

equally important, but also even more challenging in some ways. In recent years, the health and well-being needs of disabled people have increasingly been addressed along with the general health of societies (12).

Disabled women face dual discrimination in sports, namely being disabled and female. They are less interested in sports. Although 38 years have passed since the establishment of the Veterans and Disabled Sports Federation in Iran and the Veterans and Disability Sports Board provides disabled people with the opportunity to participate and recruit them in sports and in 31 provinces and many competent athletes in the disabled sports have been brought up ranks and medals and introduced as role models to society, but it is unclear why the participation of women with disabilities in sport is less than expected.

Therefore, athletes have made significant progress and many competent athletes have been trained in disability sports introduced as role models to the society, however, there is little information regarding low sport participation of disabled women. For example, a report (Healthy people 2020) demonstrated that 57% of disabled adults did not participate in sport programs. While this rate was 35% in non-disabled people (7). As estimated by Perrier, Shirazipour, and Cheung (2015), only three percent of disabled people currently participate in sports (13).

Most disabled people do not regularly participate in activities that increase the likelihood of secondary health conditions. Therefore, there is a need to understand the barriers to sport participation because such barriers for people with physical-mobility disabilities are still unknown (14). There have been significant research efforts to identify barriers to physical activities and sport for disabled people in developed countries over the past three decades. In an effort to increase the sport participation of disabled people, it is important to barriers because identifying the barriers to regular sport participation of disabled people will lead to the development of better strategies aimed at increasing their participation. So far, most of the relevant studies have been carried out in developed countries that have been able to build an increasing functional gap between themselves and developing countries using the research results. If the goal is to expand sports participation, sport programs and physical activities in developing countries, identifying

these barriers can affect the creation of appropriate contexts for the physical activity of the disabled people. Since developing countries are less involved in sports than developed countries worldwide and there are few researches aimed at identifying the specific barriers to sport participation for disabled people, it is thus vital to carry out a relevant fundamental study in our country. Investigation of barriers and driving factors can help develop strategies at reducing these barriers (14).

Most previous studies have focused on the barriers to and driving factors of sport participation in North America or Europe, and the results of these studies cannot be applied to other continents.

There have been few researches on the development of a tool assessing the barriers to sport participation of disabled people in Iran. These researches are either related to non-disabled women or their statistical population is limited to a specific geographical area of Iran and barriers to the sport participation of disabled women have not been specifically addressed. Moradi et al. (2013) identified five components (facilities and places, individual, family, cultural/social, and urban) as barriers to the presence of veterans and the disabled people in Alborz province (15). Gashtasbi et al. (2012) identified and prioritized the barriers and driving factors for the participation in physical activities for people with physical-mobility disabilities in Shiraz (16). Sobhani et al. (2015) also identified four factors including economic, environmental (transportation), facilities and equipment, and socio-cultural (17). Pour Ranjbar et al. (2014) identified three factors, including individual, structural, and socio-cultural factors in their research (18). In his research, Yamoosa (2012) identified three components of cultural, social, political, and lack of sports facilities (19). Dehghandar (2012) also reported four barriers, including psychological, physical, economic, and organizational factors (20). These researches were restricted to a limited area of Iran as a vast country and did not specifically address barriers facing women with physical-mobility disabilities. In an analytical study, Taghian et al. (2017) investigated the barriers to the sport participation of veteran women of the Foundation of Martyrs and Veterans Affairs based on the hierarchical constraints model (Crawford et al.) (21). They stated that the status of barriers to sport participation for women veterans is even more

severe than what it was previously assumed. Other researches also pointed out barriers to sport participation of disabled people and all of the above them used existing questionnaires. Most overseas researches have been conducted using structured interviews. Jaarsma (2014) investigated the barriers to sport participation in people with spinal cord injury (SCI) in Netherlands (14). The aim of this study was to provide an overview of studies that focused on barriers and solutions to maximize the sport participation of all people with physical-mobility disabilities. Databases and free texts were searched and 52 articles reviewed. The identified barriers were categorized into two categories of environmental factors, including social rejection, lack of sports facilities, transportation and social communication, and individual factors, including dependency on others and age. Bragaru (2013) reported the following barriers in a study of lower limb amputees: technical barriers, including cost of transportation, sports facilities, information and weather conditions, social barriers, including social group and an exercise partner, individual barriers, including past behavior, time management, age, physical and psychological conditions. Data collection was carried out using semi-structured interviews in this study (12). Wilson and Khoo (2013) investigated the barriers to sport participation of disabled people in Malaysia and identified structural barriers such as sports facilities, equipment and budget, and negative attitudes of government, people, and the media. Data were collected through group discussions and questionnaires (1). In a study in the United Kingdom, Rankin (2012) identified three barriers to participation of disabled people that included structural barriers that included facilities and equipment, safety and health, logistical barriers, including cost, geographical location, support from others, communications and mismatch between gyms with needs of disabled people, psychological barriers, including personal perceptions and attitudes of others. Data were collected through semi-structured interviews (22). Since disabled people have quite different conditions in developed countries than those in developing countries, it seems necessary to provide a valid and reliable measurement tool and can be a first step in identifying barriers to sport participation of disabled women. Therefore, the aim of the present research was to develop a valid tool for identifying barriers to sport

participation of women with physical-mobility disability to answer the question of what are the main barriers to participation in team sports for disabled women?

## MATERIALS AND METHODS

This is combined theoretical research in terms of form of data collection and used both quantitative and qualitative methods for different research purposes. Qualitative research method was mainly used for developing tools and quantitative research method was also used for descriptive reporting of variables exploratory and confirmatory factor analysis. This an applied research concerning its aim and the data were collected using field method. This is also a prospective study. In the qualitative phase, data collection was also carried out using semi-structured interviews with ten experienced

professors of disability sport who were selected by purposeful and snowball sampling methods as well as interviewing women with physical-mobility disabilities. Interviews included semi-ended questions taken from theoretical literature, public documents and reports, observations, and researchers' thoughts and interactions. We identified fight barriers to sport participation of women with physical-mobility disabilities. Based on the research literature and the results of the qualitative part of the research, questions were designed for each factor and finally 91 questions were formulated and then provided to seven experts to evaluate its content validity. The pilot questionnaire was prepared and provided to the experts to add or remove some questions, if needed, to increase its content validity. The questions were scored based on a five-point Likert scale ranging from strongly agree (5) to Strongly disagree (1).

Table 1. Characteristics of Experts in Disability Sports

Position	Academic Ranks	Workplace
Faculty member of Imam Hussein university	Ph.D.	Professor of Imam Hussein university of technology
Assistant professor, university of science and technology, with forty years of experience and cooperation in disability sports	P.H.D	University of science and industry
Head of student affairs of Karaj Azad university. member of the board of directors of the Alborz province veterans and disabled sports board	P.H.D	Karaj Azad university
Assistant professor of university of social welfare and rehabilitation, with 30 years of experience and cooperation in disability sports	P.H.D	University of social welfare and rehabilitation
Associate professor at Al-Zahra university, with thirty years of experience in disability sports. Vice president of thenational paralympic committee	P.H.D	Al-Zahra university
In charge of public relations of veterans and disabled sports federation	MA	Veterans and disabled sports federation
Vice president of the federation of veterans and disabled sports	P.H.D	Veterans and disabled sports federation
Vice president of the federation of veterans and disabled sports	MA	Veterans and disabled sports federation
Head of Alborz province veterans and disabled sports board	BA	Alborz province veterans and disabled sports board
Vice president of the board of veterans and disabled sports of Alborz province	MA	Alborz province veterans and disabled sports board

Table 2. Sample Size and Statistical Population Based on Geographical Segmentation of Iran

Geographical Areas	Provinces	Population		Total	Sample
		Paravolleyball	Wheelchair Basketball		
North	Golestan, Mazandaran, Gilan	108	10	118	40
South	Khozestan, Hormozgan, Boshehr	108	30	138	46
East	Khorasan Razavi	60	30	90	30
West	Ardebil, Eastern & Western Azarbayjan, Chaharmahal & Bakhtiari, Lorestan, Kohkiloyeh & Boyerahmad, Hamedan	120	20	140	47
Center	Yazd, Esfahan, Kerman, Qom, Qazvin, Markazi, Alborz, Semnan, Fars, Tehran	336	70	406	137
<b>Total</b>				892	300

The most common measurement model of latent variables is the reflective model or covariance-based approach. This model uses the maximum likelihood function (ML) to minimize the difference between the covariance model matrix and the estimated covariance matrix

based on structural equations. The latent variable is measurable by at least three observable variables in such way that there is some correlation between the measured variables. Overall, latent variables represent the attitudes of reflective variables (23).

Then, the questionnaires were prepared for the pilot testing after thoroughly evaluating the questions and editing them literally. Table 1 shows demographic characteristics of the professors whose ideas were used at this stage of the tool construction.

Since there are currently two active para volleyball and wheelchair basketball teams for women with physical-mobility disabilities, the statistical population of the present study consists of 892 women with physical-mobility disabilities of the country. To investigate the objectives of the present study, two sampling methods are needed. Initially, 150 people were selected from the statistical population by simple random sampling method to carry out exploratory factor analysis (EFA) and develop the study tool. Gall, Gall et al. (2010) believe that the sample size can be as high as 200 people during EFA (23). Also, considering five geographical regions of Iran i.e. north, south, east, west, and center, 300 people selected from the statistical population using proportional stratified sampling (Table 2) during confirmatory factor analysis (CFA) in the second sampling method. A minimum sample size of 200 has been suggested during CFA (25); however, to achieve more accurate results, 300 people were taken into account, because the larger the sample size, the lower the type II error and the more acceptable the results will be (23).

After thoroughly evaluating the questions and editing them literally, the questionnaire was prepared for the pilot testing. To collect the data in the quantitative phase of the research, we used a researcher-made questionnaire with closed-ended questions scored based on a five-point Likert range ranging from Completely Agree (5) to Completely Disagree (1). The choice of numerical scale depends on the question being asked. If a positive or negative meaning can be conceived for the concept or idea being asked about, such as the level of customer's satisfaction, it will be appropriate to choose a one or two Point-Likert scale. These are called bipolar, and it is advisable to use an odd numerical scale to measure these concepts. The designer of the questionnaire and the survey should use the middle option in the case of bipolar concepts. Various studies have shown that the reliability and validity of the two or three-point scales are lower than the 4-point scales and above, and the reliability and validity level of 7-point Likert scale or above is also somewhat reduced (24).

To carry out EFA, questionnaires were distributed at sitting-volleyball national league and wheelchair basketball championships. The

researcher was informed about the time and place of the matches through the Federation. Colleagues who had already received the necessary training distributed the questionnaires.

Cronbach's alpha was used to determine the reliability of the questionnaire. Reliability refers to the consistency and reliability of the results obtained and emphasizes the extent to which a measuring instrument yields the same results under similar conditions (25). Cronbach's alpha coefficient is the most common method to measure the internal consistency reliability of a set of items.

CFA was carried out using LISREL software after questionnaires were distributed in cooperation with the Federation of Veterans and Disabled Sports of the country to perform. To this end, a separate introduction letter was issued for each province, and the researcher sent the questionnaires to the relevant committees via a certified mail and the questionnaires were given to the subjects through committees of each province's staff and collaboration of trained people.

## RESULTS

Questionnaires were collected and 150 valid questionnaires were used to develop the tool and carry out EFA. First, data on characteristics of the subjects were classified and described using descriptive statistics and various charts. The pilot test focused on the correlation between the questions and variables and irrelevant questions were excluded from the final questionnaire. Any question that had a correlation coefficient  $<0.3$  and  $>0.85$  was omitted from the questions.

Results of EFA in SPSS software showed that the KMO statistic value is equal to 0.71, which is higher than the minimum 0.5 value; therefore, the sample size is sufficient for EFA. Bartlett test was also significant ( $p < 0.001$ ,  $\chi^2 = 4900.7$ ), i.e., meaning that the correlation between the variables was significantly different from zero. Therefore, the data structure was suitable for EFA.

Results of EFA on 91 items with varimax showed that it was logical to maintain 10 factors that explained 56.5% of the total variance based on the Kaiser criterion (eigenvalues above 1) Table 3.

The questionnaire consisted of 50 questions and 10 factors after EFA, including individual, physical, psychological, management, media support, role of coach, economic, attitude of others, social support, and cultural-religious factors. The reliability of the questionnaire was also calculated. Table 5 demonstrates the reliability of the ten factors obtained in this analysis (Table 4).

Since corrected item-total correlation values for each question were above 0.3, all items thus had a positive effect on overall reliability.

A researcher-made questionnaire was used to measure the barriers to the participation of women with physical-mobility disabilities. The questionnaire, along with questions on demographic characteristics, was provided to 300 subjects who were selected through proportional stratified sampling.

CFA was performed in the next stage where certain theoretical models are compared, and is in fact a useful method for reviewing appropriate research tools. The results of initial CFA using LISREL software showed that the factor loadings of all questions, except questions 15 and 38, were

higher than 0.5, and questions 15 and 38 were thus excluded and CFA was performed again. CFA results in LISREL software showed that the factor loadings of all questions were above 0.5, indicating that all factor loadings had good explanatory power and absolute values of T-values is above 1.96, indicating that the relevant question is capable of significantly measuring its variable (Table 6) (Mohsenin and Asfidani, 2017). The final questionnaire comprised of 48 questions and 10 factors after CFA.

Table 7 shows the goodness-of-fit indices. As can be observed, most of the indices are acceptable. Thus, CFA supports the construct validity of the tool (Figure 1).

Table 3. Results of KMO Statistics and Bartlett Test in EFA

Variable	Number of Factors	KMO Test	Bartlett Test	p
Participation Barriers	10	0.71	4900.7	<0.001

Table 4. Eigenvalues

Factor	Total	Relative Variance	Compression Variance
1	4.33	8.49	8.49
2	3.67	7.20	15.6
3	3.42	6.7	22.4
4	3.36	6.6	29.01
5	2.73	5.3	34.3
6	2.65	5.2	39.5
7	2.35	4.6	44.1
8	2.14	4.2	48.3
9	1.70	3.3	51.7
10	1.56	3.06	54.8

Table 5. Reliability of Ten Factors

Factor	Reliability Coefficient	CR	AVE
Personal	0.84	0.97	0.78
Physical	0.83	0.94	0.73
Psychological	0.82	0.93	0.70
Managerial	0.82	0.94	0.68
Media support	0.83	0.94	0.82
Coach role	0.89	0.93	0.77
Economic	0.78	0.95	0.80
Others attitude	0.78	0.90	0.72
Social support	0.69	0.93	0.83
Cultural-religious	0.63	0.91	0.79

## DISCUSSION

The aim of the present research was to construct and validate a tool assessing barriers to participation in team sports for women with physical-mobility disabilities. The results of EFA and CFA support the questionnaire on barriers to sport participation of women with physical-mobility disabilities. Results of EFA in SPSS software showed that the KMO statistic value is equal to 0.71, which is higher than the minimum criterion of 0.5. Therefore, the sample size is sufficient for EFA. Bartlett test was also significant ( $p < 0.001$ ,  $\chi^2 = 4900.7$ ), i.e., the correlation between

the variables was significantly different from zero. The reliability of all components is higher than acceptable limit, indicating good internal consistency of the tool and all items have a positive contribution to the overall reliability. The results of CFA in LISREL software showed that the factor loadings of all questions are above 0.5, which indicates that all loadings have good explanatory power and the absolute values of T-values are above 1.96, indicating that the relevant question can significantly measure its variable. Goodness of fit indices showed that most of the indices are acceptable and therefore, CFA showed that the tool had a good construct validity.

Table 6. Eigenvalue and T Values of Each Questionnaire Item

Item	Eigenvalue	T-Values
I can't exercise because of physical problems.	0.87	18.75
I do not have the support of my family to participate in sports.	0.79	16.06
Dependency on others hinders my participation in sports.	0.84	17.61
I don't trust myself to do sports.	0.83	17.23
I'm not aware of the usefulness of sports activities.	0.69	13.11
I can't easily get out of my house because of my inappropriate place of residence.	0.67	13.13
I don't have enough time to participate in sports.	0.73	12.9
I don't know how to participate in sports.	14.4	0.73
I do not have a teammate or companion in sports.	13.51	0.70
Sports facilities and spaces are not available.	13.01	0.69
Gyms for the veterans and disabled are not on public transportation route.	16.2	0.18
The sports places and spaces are not evenly distributed across the city.	18.9	0.90
Disabled people have limited access to the existing sports facilities.	11.6	0.63
There are not enough gyms for the veterans and the disabled people.	10.3	0.57
Due to physical, mental and psychological problems, I cannot participate in sports.	10.7	0.60
I have no interest in or motivation to participate in sports.	13.4	0.71
I don't like exercising beside the non-disabled people.	14.8	0.76
The fact that others help me in the sports environment bothers me.	13.1	0.70
To exercise, I have to get out of the house, and my family does not want neighbors to notice their disabled child.	15.2	0.78
The attitude of others towards disability impedes sport participation.	10.9	0.61
Poor performance is not reviewed by the management team of the federation of veterans and disabled sports.	15.2	0.77
There is no proper sport planning for the disabled people.	15.5	0.78
Veteran and disabled veterans' organizations do not support sports participation.	17.2	0.83
The federation or the disability sport committee doesn't play an effective role in motivating the disabled athletes.	15.6	0.87
The sport of veterans and the disabled people focuses on the championship and neglects the public sport.	14.7	0.75
Disabled athletes do not enjoy a special employment privilege.	11.7	0.60
Investment on the special talents of the disabled people is not the same as that of non-disabled ones.	6.48	0.53
The special sports journal of veterans and disabled people is not published and distributed nationwide.	15.4	0.77
There is poor information about the opportunities for disabled people.	19.7	0.91
Popular media do not cover sports for disabled people, and the print media do not move in the same direction.	16.5	0.81
No specific disability sport program is broadcasted during the week at the right time.	15.5	0.78
The coach is expecting me more than I can do.	13.04	0.73
The coach does not have the necessary expertise in the training of veterans and the disabled people.	13.08	0.71
Coach kill the motivation to exercise in me.	13.5	0.73
The coach has no disability; he/she cannot understand the disabled people.	13.4	0.73
There is no sufficient funds and budget for the sports of veterans and the disabled people.	11.19	0.62
The budget allocated for the disability sports is not proportionally distributed in different sports.	17.3	0.87
There are no facilities for disabled people to move from home to the gym and vice versa.	9.86	0.56
The disabled people must pay high costs for commuting to sport places.	11.4	0.64
People look at the handicapped as a disabled person.	13.2	0.75
People pity the disabled people.	16.8	0.93
They are disrespected by others on their way to the gym.	9.45	0.53
People don't welcome sporting events of veterans and disabled people as they do for non-disabled people.	13.8	0.77
People value the honor of a non-disabled athlete more than a disabled one.	13.6	0.7
People attach less importance to the sport of veterans and the disabled people.	11.9	0.68
Religious beliefs prevent sport participation.	13.6	0.76
Islamic clothing prevents sports participation.	15.2	0.83
The existence of some negative attitudes, such as stereotypes and family prejudices, prevents the sport participation of veteran and disabled women.	11.5	0.66

One of the most important tasks of physical education managers is to remove the barriers to participation in physical activities. Disabled people face more barriers to sports participation than non-disabled people, and women with physical-mobility disabilities experience numerous barriers. Identifying these barriers requires a comprehensive, valid and reliable questionnaire that is capable of assessing barriers so that we can provide solution to remove these barriers by using this tool and the results of this research in the next steps. The results

of the present study resulted in the identification of 10 factors, including individual, structural, psychological, managerial, media support, the role of coach, economic, psychological factors related to pitiful and disrespectful attitudes, supportive public social and cultural-religious factors. The personal conditions of the disabled people affect their sport participation. Physical problems, lack of family support for the disabled family member, lack of understanding of the usefulness of sports activities, lack of knowledge of how to participate in sports,

inability to leave home due to inappropriate place of residence, and lack of a companion and teammate are considered as individual barriers for disabled women. Consistent with the present study, Jaarsma

(2014) in the Netherlands and Moradi et al. (2017) referred to individual factors (14, 15). The present study also showed that these factors were effective.

Table 7. Goodness of Fit Indicators

Indicators	Value	Accepted Value	Result
Chi square	P = 0.000 X <sup>2</sup> = 2523.6	Sig.	0.05 Sig. Sig <
X <sup>2</sup> /df	2.4	3 > < 1	Sig.
RMSEA	0.06	0.06 <	Sig.
NFI	0.90	0.90 >	Sig.
CFI	0.93	0.90 >	Sig.
IFI	0.93	0.90 >	Sig.
SRMR	0.07	0.08 <	Sig.

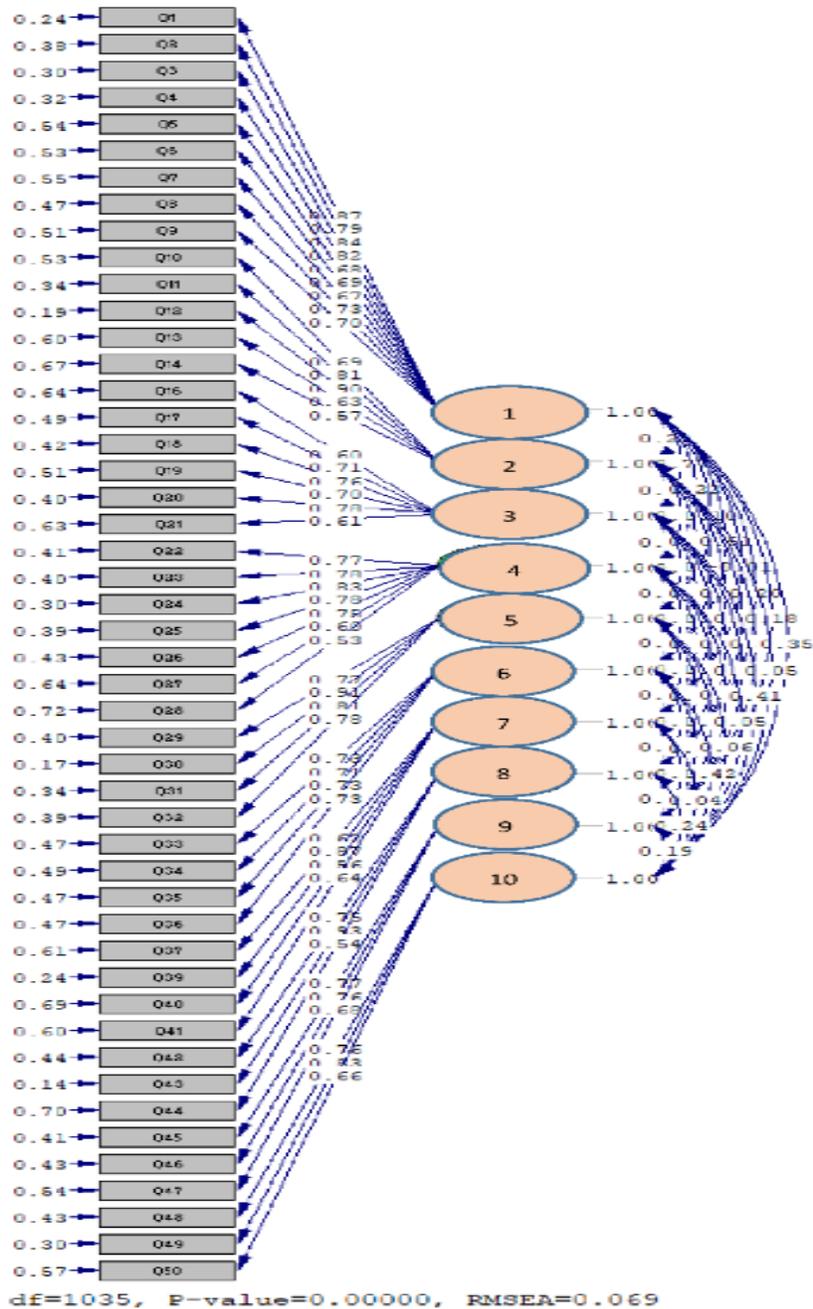


Figure 1. The Factor Loadings of the Items on Each Factor. Eigenvalue of Items on Each Factor. 1- Individual, 2-Structural, 3-Psychological, 4-Manageral, 5-Media Sippott, 6-The Role of Coach, 7-Economic, 8-Attitude, 9-Social Support, 10-Cultural-Religious.

Psychological factors were another barrier to the sport participation of women with physical-mobility disabilities in the present study. Disabled people's attitude towards themselves and society's attitude towards disabled people, lack of motivation and interest to participate in sports activities, pitiful attitude towards people with disabilities as a disabled person are other barriers to participation in physical activities for women with disabilities. Bragaru (2013) and Rankin (2012) identified psychological factors as important barriers (12, 22).

The findings of the present study referred to media support for the sport activities of people with disabilities as another influential factor. It is noteworthy that sports activities of the disabled people, like other sports, are not covered by popular media, and no special disability sports journal is published nationwide. Davis (2005) indicated in their research that difficulty in accessing information and poor information are other important barriers facing disabled people while performing physical activities (26). Wilson and Khoo (2013) and Ghorbani et al. (2013) also identified the media barrier as an important barrier (1, 27). The results of a research by Imanian et al. (2017) showed that 92% of the content of sports programs broadcasted in the second 6 months of 2014 was dedicated to healthy people and only 8% for disabled people that included 25 sport fields for the non-disabled people and 8 for the disabled people (28). Moreover, sport channels cover 64% of male sporting event as compared to 2% female disabled athletes. Lack of access to sports facilities and places, inadequate distribution of sports places across major cities, lack of accessibility of existing sports places were other important structural barriers. Rankin (2012), Ghorbani et al. (2013), and Ehsani et al. (2007) identified these factors as one of the major barriers to the sport participation of the disabled people (22, 27, 29). Divine (2016) believed that accessing and learning sports facilities and equipment is not only important, but disabled people should be able to use these facilities (7). In other words, physical participation in sports activities will increase when sport facilities and equipment are available and disabled women can use them.

Other barriers to participation of women with physical-mobility disabilities included lack of attention and support of sports authorities and

administrators of disability sport, lack of proper sports planning, focus on championship sports and lack of attention to public sport, disregard for the future of national athletes who devote all their time and sometimes life to play sports and gain glorious honors for their country. Consistent with the present study, the findings of a research by Dehghandar (2012) emphasize managerial factors (20).

Financial and economic barriers are other important barriers to the physical activity of disabled people. Disproportionate budget allocation for sports, inadequate allocation of funds for sports of the disabled people, lack of transport facilities for disabled women, were among the economic factors negatively affecting the sport participation of women with physical-mobility disabilities. Sobhani et al. (2015) and Shirvani et al. (2015) have regarded economic barriers as an important factor in sport participation in their research (17, 30).

Unwelcoming tournaments of the disabled people, disregarding the glorious victories of disabled athletes over non-disabled athletes, and neglecting the activities of disabled athletes were among barriers identified as the social support factor and all of them prevented the participation of women with physical-mobility disabilities.

Negative attitudes towards women's sports activities are one of the negative factors affecting this area in the Iranian society. The existence of some subcultures, including negative attitudes such as stereotypes and family prejudices and religious beliefs, in some cases, prevent women from engaging in sports activities. The results also revealed that cultural-religious factor was a barrier for sport participation of women with physical-mobility disabilities. Naghdi (2011) emphasizes cultural-religious barriers in his research (31).

The role of coach was another barrier identified in the present study. Without knowing the abilities of the disabled people, the coach expects them to perform exercises that are beyond their ability and consequently eliminates the motivation to exercise in them. He/she also doesn't have the necessary expertise in the disability's sports, and the disabled people feel that the coach is unable to understand them because he or she is not disabled. In their research, Moradi et al. (2017) emphasized the role of coach in the sport participation of the disabled people (15).

Other factors include the pitiful and disrespectful attitude of others towards the disabled people. People view the handicapped as disabled people and pity them and they are likely to be disrespected. Moradi et al. (2017) and Rankin (2012) considered the role of attitudinal factors as one of the factors affecting sport participation (15, 22).

The present study identified ten factors that prevent active sport participation of women with physical-mobility disabilities. Individual barriers can be eliminated by raising families' awareness of the benefits of sports and encouraging them to support sport participation of the disabled people, as well as by encouraging peers and forming team sports.

Most of the domestic and international researches referred to the negative attitudes of disabled people towards themselves and the negative attitudes of people towards these people in society as barriers negatively affecting sport participation. These barriers can be eliminated by changing the attitudes and modifying behaviors of disabled people. Therefore, it is suggested to hold special scientific conferences for disabled people to change attitudes, increase understanding of the positive effects of participating in sports activities and encourage them to exercise.

Most sports news and information focus on healthy people, and little attention is paid to the disabled people, especially women with disabilities. Therefore, considering their social mission and responsibilities media, especially sports media, should not neglect these important strata of society. If hours are allocated each week to report on competitions and sports activities of women with physical-mobility disabilities, reflect their views and opinions, invite and introduce successful sport individuals on television channels, and interview them in sports press, the disability sport is no longer marginalized and their sport participation increases. Therefore, it would increase the interest and enthusiasm of the disabled people for attending sports and recreation events and, in addition to gaining valuable information about the benefits of exercise and physical activity on their health.

Disabled people can be attracted to and involved in sports activities wherever sports gyms are designed in a way that floor tiles, door widths of restrooms and sloping surfaces can be used for these people and if the sports places are distributed proportionally to the number of the disabled people participating in sports activities and on the public transport route as far as possible. There are methods

to increase the physical activity of the disabled people and to maximize the benefits of regular exercise. One of the most important of these methods to improve the quality and quantity of facilities and places available to the disabled women.

The descriptive statistics of the present study demonstrated that a large portion of women with physical-mobility disabilities belong to the middle- and poor-income classes and often do not have appropriate jobs, so, it seems that an effective strategy to increase the sports participation of the disabled women is to provide financial facilities to lower the cost of sports activities.

Providing free transportation services, which bring the disabled people to sport places as a group or individually, saves time and costs for these people. The urban transport fleet, especially the buses commuting on the routes leading to the stadiums, are not easily accessible, and it seems that municipalities can play a vital role in providing a normal life for the disabled people. Part of the economic barriers for the disabled people can be solved by removing the commuting problem and facilitate their access to society. Issues related to the disabled people are usually ignored when designing development plans that are ultimately beneficial to communities. Thus, when the disabled people face various barriers while trying to participate in social programs such as sports. Identifying barriers to participation of women with physical-mobility disabilities in our country can lead to the development of strategies to increase their sport participation, and managers and administrators of disability sports can provide the appropriate contexts for greater participation of veteran women with physical-mobility disabilities using the results of this research.

#### **APPLICABLE REMARKS**

- It seems that the authorities and administrators of the disabled people play the greatest role in the building culture and creating appropriate contexts for the growth and active sport participation of women with disabilities.
- By focusing on these barriers, the provincial sport committees can adopt programs that enable greater participation of women.
- Disability sport managers should adopt strategic policies to address the barriers.
- The Ministry of Sports and Youth can facilitate the barriers associated with a number of these factors by allocating sufficient funds and injecting them into provincial sport committees.

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