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Quality of life and adherence to physical activity in leisure time of people with physical disability

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Abstract

Study aim: People with disability are characterized by mental disorders, lower physical function, and poor social functioning. Dramatically, they are at particular risk of loss of their psychosocial functions. Here, we tested the relationship between quality of life and adherence to physical activity in leisure time of people with physical disability.

Material and methods: A cross-sectional design based on the descriptive correlational method was applied. The statistical population of the study included 555 people with different types of physical disability. A quality of life questionnaire (SF-36) was used to assess the quality of life, and adherence to physical activity was measured with the Adherence to Physical Activity Questionnaire. Preliminary calculations involved a series of Pearson correlations. Moreover, descriptive and inferential statistics were used. Finally, structural equation modeling was used to assess the research model.

Results: The results showed that there was a positive and significant relationship ($P < 0.05$) of the quality of life and its components with adherence to physical activity. Based on statistical analysis, 73% of adherence to physical activity changes was related to the quality of life components.

Conclusion: According to the results, special attention to the social functioning of physically disabled people and efforts and planning in order to improve it can help to improve the quality of life of these people. Also, by designing diverse sports programs for their leisure time we can help improve the adherence of physically disabled people to physical activity.

Keywords: Physically disabled people – Quality of life – Adherence to physical activity – Social function

Introduction

Disability results from the interaction between health conditions, such as dementia, blindness or spinal cord injury, and environmental and personal factors. An estimated 16% of the global population, or 1.3 billion people, have a significant disability. Persons with disabilities face health inequities caused by unfair conditions relating to socioeconomic and political contexts, social determinants of health, risk factors and health system barriers [25]. The results of previous studies in Iran showed that 13 out of 10,000 people had at least one type of disability [32]. Physical disabilities are more prevalent than mental disabilities [3].

Throughout the history, people with disabilities have always suffered discrimination and mistreatment, and because of the negative views that society has towards disability, disabled people often experience a series of challenges. Currently, disability laws around the world are significantly concerned with the needs of disabled people [20]. Therefore, the quality of life of disabled people has improved significantly, and in recent years, one of the most important steps taken in this field has been increasing the participation of disabled people in sports [24].

Quality of life is a construct based on earlier terms from ancient Greece to the early 20th century, such as the good life, satisfaction, happiness, self-actualization, hedonism, eudemonism, and more [5, 29]. It includes objective indicators (e.g., socioeconomic factors) and subjective indicators (e.g., social involvement) of a broad range of life domains. The World Health Organization (WHO) defines quality of life as "individuals' perception of their position

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in life, in the context of the culture and value systems in which they live, and in relation to their goals, expectations, and standards [9]. This definition relates to subjective aspects of quality of life, which depend on individual values, and are affected, in a complex way, by the person's physical health, psychological state, and level of independence, social relationships, personal beliefs, and their relationship to salient features of their environment [8].

One of the fields of participation of the disabled in social activities and preventing their isolation in society is participation in sports. In people with disabilities, physical activity not only helps to improve their physical health but is also important for psychological and social functioning [18]. The higher the frequency of physical activities for the disabled is, the higher will the quality of their life be [15]. Thus, regular physical activity and exercise are very important for the health and function of people with disabilities. However, there is substantial evidence showing that people with disabilities engage less in physical activity compared to healthy people [27]. It has been reported that disabled people (about 37.7%) were less engaged in physical activities than healthy people (49.4%) [2]. Moreover, 56.6% of disabled people are inactive during the week compared to 12.8% of healthy people.

People turn to the sports environment for various reasons and to meet their various needs, but they do not adhere to it for various reasons. Weinberg and Gould (2003) stated that starting an exercise program is easier than adhering to it, and 50% of people who participate in exercise programs abandon them within the first six months. Continuation of physical activity and following a regular exercise program is a matter that is referred to as adherence to exercise and physical activity. It seems that adopting exercise methods that can increase the sense of efficiency and enjoyment in people and satisfy their need for efficiency and enjoyment can cause adherence to physical activity and sports in different sections of society, especially the disabled. Therefore, probably one of the main reasons for the low level of physical activity at the community level is the use of inefficient and traditional methods in physical education [29]. Therefore, it seems that the main challenge in the subject of adherence to physical activity is to formulate methods and approaches that can maintain them in the sports environment [36]. Research has been conducted in Iran regarding sports and physical activity and their effects on the quality of life of disabled people. Rajati et al. [26] reported that gender, self-reported physical activity levels, use of the disability aid tools, and depression are significant predictors of the physical component. Alizadeh & Gharakhanlou [1] found that the way disabled people spend their leisure time is not desirable, and in this regard, the lack of facilities and equipment and financial constraints and the prevalence of the disadvantages are significant, and the abundance of leisure time for the disabled and veterans is an important point that needs to be addressed. Naderi et al. [21] found that levels of self-esteem and social development of disabled athletes are higher than those of disabled non-athletes. Also, Zar et al. [38] found that active disabled people had a better condition compared to inactive people in the overall score of mental health and subscales of physical symptoms, anxiety, depression, quality of life and role limitation.

Quality of life is one of the important characteristics that are severely affected by an inactive lifestyle in people with disabilities. People with disabilities are limited by the barriers they face in the workplace and in everyday life, such as difficult employment, discrimination by the employer, and disregard for the individual's abilities and disregard for their needs [16]. Therefore, one of the appropriate areas to overcome such restrictions is the participation of people with disabilities in social activities and preventing their isolation in society through participation in physical activities and sports [28]. Physical activity, as a therapeutic-recreational activity, while filling leisure time, can improve the physical, psychological, and social aspects of people with disabilities [4, 12, 18]. Therefore, adequate opportunities and support for people with disabilities should be considered to increase the level of physical activity among them. However, there are not many studies about physical activity in relation to the quality of life of people with disabilities [13].

Also, we found a lack of coherent research to assess the relationship between the quality of life and adherence to physical activity of people with disabilities in their leisure time. Hence, the current study will contribute to a broader picture of the life quality factors and adherence to physical activity in people with disabilities. Based on the above-mentioned issues, the main aim of the study was to determine whether the level of quality of life of physically disabled people affects their adherence to physical activity in their leisure time.

Material and methods

Participants

The statistical population of the study included physically disabled people. Due to the unavailability of information on the exact number of physically disabled people, to select the sample, the method of 10 to 15 times the number of questionnaire items was used [10], based on which 555 physically disabled people in Mashhad city were selected. Moreover, at the beginning and before the distribution of the questionnaires, the necessary coordination was made with these people and the necessary explanations about the research plan and how to answer the questions were provided to the participants. Also, the questionnaires were distributed in person among these people.

Procedure

The method of the study involved a cross-sectional design which was applied based on the descriptive correlational method. People with all kind of disabilities were gathered to participate in the present cross-sectional study. Participants were thoroughly informed about the aims of the study and about the confidential and anonymous data handling. Next, they gave their written informed consent. After that, participants underwent thorough testing for quality of life and adherence to physical activity. The study was executed in accordance with the rules laid down in the Declaration of Helsinki and its later amendments.

Instruments

Quality of life

To assess the quality of life, the 36-item Short-Form Health Survey (SF-36) was used [19, 35]. This test has 26 items and 3 components of physical function (items 1 to 11), psychological health (items 12 to 20) and social function (items 21 to 26). Points were adjusted based on a 5-point Likert scale (very high = 5, high = 4, somewhat high = 3, low = 4, very low = 1). Also, items 12, 15, 16, 19 and 21 to 26 were reverse scored. The Persian version of SF-36 has strong validity [16]. The Cronbach's alpha for the present sample was 0.94.

Adherence to physical activity

Commitment and adherence to physical activity and exercise was measured with the Adherence to Physical Activity Questionnaire [7]. The items are enthusiasm for exercise, exercise intensity and frequency, reinforcement, and disruption. Three components of awareness (items 1 to 4), equipment (items 5 to 7) and enhancers (items 8 to 11) were also measured. Points were adjusted based on a 5-point Likert scale (very high = 5, high = 4, somewhat high = 3, low = 4, very low = 1). The Cronbach's alpha for the present sample was 0.88.

Statistics

Preliminary calculations involved a series of Pearson's correlations. Moreover, descriptive and inferential statistics were used. Descriptive statistics were used to classify raw scores, calculate frequencies, and calculate scattering indices such as mean and standard deviation. In the inferential statistics section, skewness and kurtosis tests, Pearson's correlation test to determine the relationship between variables and the regression test to predict dependent variable changes based on independent variable components were used. Finally, the relationships between research variables were examined using structural equation modelling. Distribution of research data was normal based on skewness and kurtosis tests. The nominal level of significance was set at alpha $p \leq 0.05$. The statistical analyses were performed with SPSS 24.0 (IBM Corporation, Armonk NY, USA) for Apple Mac.

Results

In this section, first the demographic characteristics of the participants are presented (Table 1).

As can be seen in Table 1, men were in the majority (77.3% men, 22.7% women). Based on the experience of physical activity, the highest number is related to 11–15 years (44.9%) and the lowest is related to less than 5 years (8.3%). Based on monthly income, the highest number is related to 60-100 million rials ($200–333.5) (35.9%) and the lowest is related to more than 110 million rials (more than $366.5) (29.7%). Based on marital status, the highest number is related to married people (73.2%) and the lowest is related to single people (26.8%). Finally, based on job status, the highest number is related to employed people (62.2%) and the lowest number is related to housewives (3.4%).

Next, using Pearson's correlation test, the relationship of quality of life and its components with adherence to physical activity in the physically disabled was investigated (Table 2).

As shown in Table 2, there is a positive and significant relationship between quality of life and its components with adherence to physical activity ($P<0.05$).

Then, using regression test, the prediction of adherence to physical activity by components of quality of life was examined (Table 3).

According to the results in Table 3, the Durbin-Watson statistic, which should be a number between 1.5 and 2.5, was 1.97. Also, the correlation coefficient and explanation coefficient between the scores of components of quality of life and adherence to physical activity were determined; the correlation coefficient was 0.85 and the explanation coefficient was 0.73. So, it can be said that 73% of change in adherence to physical activity is related to the components of quality of life. Also, the results of Table 3 were used to obtain the regression equation formula; according to this table, the formula for calculating adherence to physical activity is as follows:

Adherence to physical activity = 0.254 + 0.449 (physical function) + 0.373 (psychological health) + 0.116 (social function).

Finally, the relationship between research variables was examined using structural equation modelling (Figures 1 and 2).

The results of the structural model of the research show that this model has a good fit and the relationship between the two main variables of the research is confirmed. Also, the indices of the model indicate its proper fit, so that the values of NFI, CFI and AGFI were 0.99, 0.99 and 0.96 respectively.

Table 1. Demographic characteristics of participants

Variable	Range/type	Number	Percentage
Gender	Male	429	77.3
	Female	126	22.7
		555	100
Experience of physical activity (years)	Less than 5	46	8.3
	6–10	195	35.1
	11–15	249	44.9
	More than 16	65	11.7
		555	100
Income (per month)	Less than 50 million rials ($166.5)	191	34.4
	60–100 million rials ($200–333.5)	199	35.9
	More than 110 million rials (more than $366.5)	165	29.7
		555	100
Marital status	Single	149	26.8
	Married	406	73.2
		555	100
Job status	Employee	345	62.2
	Freelancer	191	34.4
	Housewife	19	3.4
		555	100

Table 2. Results of Pearson correlation test

Variables	Pearson coefficient	P-value
Physical function and Adherence to physical activity	0.82	0.001
Social function and Adherence to physical activity	0.54	0.001
Psychological health and Adherence to physical activity	0.81	0.001
Quality of life and Adherence to physical activity	0.84	0.001

Table 3. Results of regression test and model coefficients

R	R^2	Adjusted R^2	Std. error of the estimate	P-value	Durbin-Watson
0.859	0.738	0.736	0.41236	0.001	1.97
Model	Unstandardized coefficients		Standardized coefficients	t	p-value
	B	Std. error	Beta		
Constant	0.254	0.114		2.234	0.02
Physical function	0.462	0.043	0.449	10.776	0.001
Psychological health	0.346	0.039	0.373	8.858	0.001
Social function	0.132	0.030	0.116	4.469	0.001

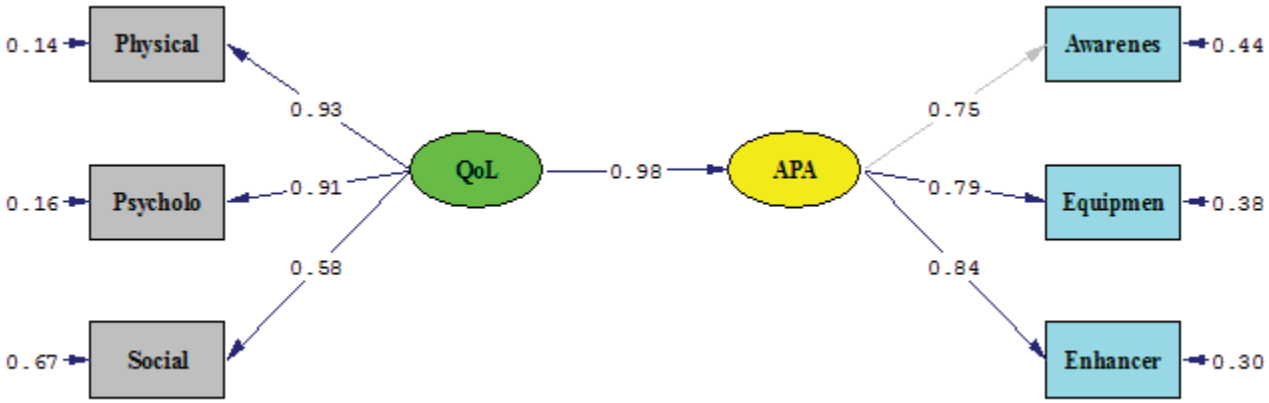


Figure 1. The structural model of the research in standard mode

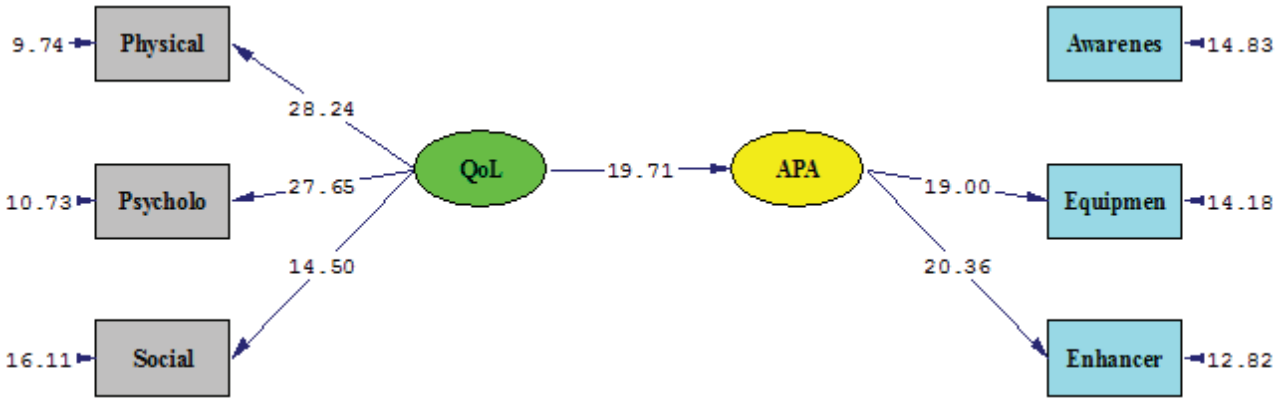


Figure 2. The structural model of the research in t-statistic mode

Discussion

The findings of the study indicate that the most important components of quality of life are: "physical function (0.93)", "psychological health (0.91)", and "social function (0.58)". The findings are consistent with the previous studies [4, 11, 14, 15, 17, 21, 22]. In this regard, by comparing the quality of life between active and inactive workers, it was found that the physical and psychological components and quality of life in the group of active workers compared to the inactive group were higher [14]. In examination of the role of social support in the quality of life of the elderly, it was reported that the average total score of the quality of life of the elderly was 52.64 and the component of social function had the highest value among various components [11]. While most veterans and the disabled people were very interested in spending their leisure time actively, especially with sports, they mentioned transportation problems, physical problems and lack of facilities and architectural problems of the city as well as financial issues as the main barriers to participation in sports activities [28].

Furthermore, the present study showed that the most important component of quality of life from the viewpoint of the disabled was the physical function. Disabled people are not satisfied with their daily physical activities, including transportation, daily shopping, bending, kneeling or climbing stairs. Part of this dissatisfaction can be attributed to economic problems as well as a lack of proper infrastructure for these people. However, they are relatively satisfied with their relationships with friends, neighbors, relatives, and others.

Moreover, it was found that, among the components of adherence to physical activity, the most important components are: "enhancers (0.84)", "equipment (0.79)" and "awareness (0.75)". These findings are consistent with a number of previous studies [6, 37]. It was found that in examination of the facilitators of attendance and adherence to group-based physical activity for older adults, social factors, coaching characteristics, type of physical activity, class duration and perception of each individual of physical activity have an effect on the presence and adherence of the elderly in the sports group [6]. Furthermore, a study reported that by examining the adherence to physical activity recommendations and quality of life

among older people, 44.1% of the participants met aerobic exercise recommendations; only 17.4% met all physical activity recommendations [37]. Individuals whose health was rated as good were found to adhere to all physical activity recommendations more. Also, the mean quality of life levels of the elderly who met aerobic exercise recommendations and all physical activity recommendations were higher.

It was also found that there was a positive and significant relationship between quality of life and its components and adherence to physical activity, and 73% of changes in adherence to physical activity were related to components of quality of life. This finding is consistent with previous findings [23, 30, 33, 34]. In this regard, Soori et al. [33], by examining the relationship between physical activity and quality of life in older women, found that physical activity affected quality of life, and the mean level of physical activity, limitations in social role, physical pain, social function, psychological health limitations in emotional role, vitality, general health and physical function in active elderly women were higher than the average of inactive elderly women, and they also reported a positive and significant relationship between physical activity and quality of life. Further, Sanaei et al. [30] found that both sports and leisure physical activity affected the physical and mental dimension of quality of life. Another study also examined the relationship between physical activity and quality of life among women aged 60 and above and found that quality of life was negatively influenced by leisure, but time spent in this physical activity was the shortest in comparison to other types of physical activities. In this sample, only physical activity for transportation was positively associated with a better quality of life [34]. They also found that only physical activities with long durations were positively related to a better quality of life. Nusselder et al. [23] reported that physical activity and exercise affected patients' quality of life and that their quality of life was related to life expectancy and self-reliance.

Finally, based on the structural model of the research, it can be said that the level of quality of life of physically disabled people can affect their adherence to physical activity in their leisure time (0.98), and therefore the main hypothesis of the research was confirmed.

Conclusion

According to the findings, it can be concluded that adherence to physical activity in people with physical disabilities is positively related to their quality of life. This result shows the importance of paying attention to physical activity and adherence to it in these people, which can improve their physical, psychological and social function and, in general, their quality of life. Based on the experience of physical activity, 45% of the disabled people have 11 to 15 years of physical activity, indicating their high adherence to physical activity. However, it seems necessary to review their activities to plan them according to their needs. Therefore, conducting more research on the relationship between quality of life and psychological health of people with disabilities with an emphasis on leisure sports activities is needed.

Based on the components of adherence, the enhancers component had the greatest impact and the components of equipment and awareness were the second and third. Thus, these people have acknowledged that they believe in the usefulness of family support to engage in physical activity, having friends who engage in similar physical activity, support from peers to participate in physical activity, and a medical recommendation to do physical activity. Also, they stated that they know how to design their physical activity plans, find a place to exercise near home or the workplace, and obtain the equipment to engage in physical activity and enjoy it. Additionally, they believe in the usefulness of physical activity for themselves, enjoy physical activity and regular exercise, and are confident in their ability to exercise and do physical activities. Finally, having good sports skills is the last priority for these people.

Conflict of interest: Authors state no conflict of interest.

References

1. Alizadeh H., Gharakhanlou R. (2000) A Survey on Current Pattern of Disable's Leisure Time with Emphasis on Physical Education and Sport. *J. Motion.,* 6: 23-39. http://ensani.ir/fa/article/186246
2. Brown D.R., Yore M.M., Ham S.A., Macera C.A. (2005) Physical activity among adults > or = 50 yr with and without disabilities. *Med. Sci. Sports Exerc.,* 37(4): 620-629. DOI: 10.1249/01.mss.0000158189.17546.ed
3. Caron J., Tempier R., Mercier C., Leouffre, P. (1998) Components of social support and quality of life in severely mentally ill, low income individuals and a general population group. *Comm. Ment. Health J*., 34(5): 459-475. DOI: 10.1023/a:1018786228664
4. Cooper R.A., Quatrano L.A., Axelson P.W., Harlan W., Stineman M., Franklin B., Krause J.S., Bach J., Chambers H., Chao E.Y., Alexander M., Painter P. (1999) Research on physical activity and health among people with disabilities: a consensus statement. *J. Rehabil. Res. Dev.,* 36(2): 142-154.
5. Cummins RA. Assessing quality of life in: Brown R., ed.: Quality of life for people with disabilities: Models, research and practice. 21997. p. 116-150.

6. de Lacy-Vawdon C.J., Klein R., Schwarzman J., Nolan G., de Silva R., Menzies D., Smith B.J. (2018) Facilitators of attendance and adherence to group-based physical activity for older adults: A literature synthesis. *J. Aging. Phys. Act.*, 26(1): 155-167. DOI: 10.1123/japa.2016-0363
7. Derakhshanpour A., VaezMousavi M.K, Taheri H.R. (2018) Effect of Special Cognitive-Behavioral Intervention on Commitment to Exercise and Mental Health. *Glob. J. Health Sci.*, 10(5): 78-87. DOI:10.5539/gjhs.v10n5p78
8. Felce D. (1997) Defining and applying the concept of quality of life. *J. Intellect. Disabil. Res*., 41(2): 126-135.
9. Group TW. (1998) The World Health Organization quality of life assessment (WHOQOL): development and general psychometric properties. Social science & medicine, 46(12): 1569-1585
10. Hair J.F., Black W., Babin B.J., Anderson R.E. (2010) Multivariate data analysis: A global perspective. In: Pearson, Upper Saddle River, New Jersey. ISBN: 0135153093.
11. Hosseini E., Khanjari S., Oskouie F., Heidari M., Ghodusi M. (2014) Quality of life and its associated factors in primary family caregivers of children with physical disabilities under supervision of welfare organization Iran-Ilam. *IRI. J. Rehabil. Res.,* 1(1): 23-31. URL: http://ijrn.ir/article-1-38-en.html
12. Hutzter Y., Bar-Eli M. (1993) Psychological benefits of sports for disabled people: A review. *Scandin. J. Med. Sci. Sports*, 3(4): 217-228. DOI:10.1111/j.1600-0838.1993.tb00386.x
13. Jalayondeja C., Jalayondeja W., Suttiwong J., Sullivan P.E., Nilanthi D.L.H.K (2016) Physical activity, self-esteem, and quality of life among people with physical disability. *Southeast. Asian. J. Trop. Med. Pub. Health*, 47(3): 546-558. PMID: 27405139.
14. Khavidaki M.H.D., Zarch M.K., Ahmadabadi N.M., Hosseini H. (2020) Comparison of Quality of Life between Active and Inactive Workers. *J. Shah. Sadoughi Uni. Med. Sci.,* 28(8): 2960-2970. URL: http://jssu.ssu.ac.ir/article-1-5103-en.html
15. Kim T., Park S.Y., Oh I.H. (2022) Exploring the Relationship between Physical Activities and Health-Related Factors in the Health-Related Quality of Life among People with Disability in Korea. *Int. J. Environ. Res. Pub. Health*, 19(13). DOI: 10.3390/ijerph19137839.
16. Kroll T., Jones G.C., Kehn M., Neri M.T. (2006) Barriers and strategies affecting the utilization of primary preventive services for people with physical disabilities: a qualitative inquiry. *Health Soc. Care. Comm.,* 14(4): 284-293. DOI: 10.1111/j.1365-2524.2006.00613.x
17. Laferrier J.Z., Teodorski E., Cooper R.A. (2015) Investigation of the impact of sports, exercise, and recreation participation on psychosocial outcomes in a population of veterans with disabilities: a cross-sectional study. *Am. J. Phys. Med. Rehabil.,* 94(12): 1026-1034. DOI: 10.1097/PHM.0000000000000263
18. Martin J.J. (2013) Benefits and barriers to physical activity for individuals with disabilities: a social-relational model of disability perspective. *Disab. Rehabil.,* 35(24): 2030-2037. DOI: 10.3109/09638288.2013.802377
19. Montazeri A., Gashtasebi A., Vahdaninia M., Gandek B. (2005) The Short Form Health Survey (SF-36): translation and validation study of the Iranian version. *Qual. Life Res*., 14(3): 875-882. DOI: 10.1007/s11136-004-1014-5
20. Murphy E.A. (2018) Understanding Thai Attitudes toward Individuals with Physical Disabilities: Outcome of an International Adaptive Sports Training Program. *Clemson University*, All Theses. 2922. https://tigerprints.clemson.edu/all_theses/2922
21. Naderi A., Sakinehpoor A., Farhadi V., Shabani F. (2016) A comparative study of the comparison of quality of life and life satisfaction, self-esteem and social development between disabled athletes and non-athletes with disabilities. *MEJDS.,* 7: 12-12. URL: http://jdisabilstud.org/article-1-608-en.html
22. Nirje B. (1970) I – the Normalization Principle – Implications and Comments. *J. Men. Subnorm.*, 16 (31): 62-70. DOI: 10.1179/bjms.1970.013.
23. Nusselder W.J., Looman C.W., Mackenbach J.P., Huisman M., Van Oyen H., Deboosere P., Gadeyne S., Kunst A.E. (2005) The contribution of specific diseases to educational disparities in disability-free life expectancy. *Am. J. Pub. Health*, 95(11): 2035-2041. DOI: 10.2105/AJPH.2004.054700
24. Oliver L., Stephan G., Leonard A., Volker K., Werner K. (2018) Relegation of disabled children to lower age-levels in junior football – results and limitations of inclusion in recreational football. *Sci. Med. Football*, 2(4): 315-320. DOI: 10.1080/24733938.2018.1451650
25. Organization WH. (2023) Addressing health inequities faced by persons with disabilities to advance universal health coverage. February 2023.
26. Rajati F., Ashtarian H., Salari N., Ghanbari M., Naghibifar Z., Hosseini S.Y. (2018) Quality of life predictors in physically disabled people. *J. Educ. Health Promot.*, 7: 61. DOI: 10.4103/jehp.jehp_115_17
27. Rimmer J.H., Marques A.C. (2012) Physical activity for people with disabilities. *The Lancet*, 380(9838): 193-195. DOI: 10.1016/S0140-6736(12)61028-9
28. Rimmer J.H., Riley B., Wang E., Rauworth A., Jurkowski J. (2004) Physical activity participation among persons with disabilities: barriers and facilitators. *Am. J. Preven. Med.*, 26(5): 419-425. DOI: 10.1016/j.amepre.2004.02.002
29. Sahraeian I. (2016) The Effects of Cooperative Learning on Adherence to Handball Exercise: Mediating Role of Sport Self-Efficacy and Enjoyment. *Sport Psychol. Studies*, 5(17): 27-56.

30. Sanaei M., Zardoshtian Sh., Norouzi Seyedhosseini R. (2014) The Effect of Physical Activity on Quality of Life and Life Expectancy in the Elderly Mazandaran Province. *J. Sport Manage. Stu.*, 5(17): 137-157. https://www.sid.ir/paper/234476/fa
31. Schalock RL. (2004) The concept of quality of life: what we know and do not know. *J. Intellect. Disabil. Res*., 48(3): 203-216.
32. Soltani S., Khosravi B., Salehiniya H. (2015) Prevalence of disability in Iran. *Iran. J. Public. Health*, 44(10): 1436-1437.
33. Soori A., Shabani Moghadam K., Soori R. (2016) Relationship between physical activity and quality of life of elderly women in Kermanshah province. *App. Res. Sport Manage.* 4(4): 75-84. DOI: 20.1001.1.23455551.1395.4.4.7.5
34. Valadares A.L.R., Carvalho E.D.D., Costa-Paiva L.H.d., Morais S.S., Pinto-Neto A.M. (2011). Association between different types of physical activities and quality of life in women aged 60 years or over. *Rev. Associ. Méd. Brasileira*., 57: 450-455. DOI: 10.1590/S0104-42302011000400021
35. Ware Jr J.E., Sherbourne C.D. (1992) The MOS 36-item short-form health survey (SF-36): I. Conceptual framework and item selection. *Med. Care*, 30(6): 473-483. PMID: 1593914.
36. Weinberg R.S., Gould D. (2023) Foundations of sport and exercise psychology: Human kinetics.
37. Yilmaz A., Yilmaz F., Olak M.Y. (2018) Adherence to physical activity recommendations and quality of life among older adults. *Int. J. Pub. Health Clin. Sci.*, 5(2): 120-134. https://www.researchgate.net/publication/328066095
38. Zar A., Alavi S., Hosseini S.A., Jafari M. (2018) Effect of sport activities on the quality of life, mental health, and depression of the individuals with disabilities. *Iran J. Rehabil. Nurs.*, 4(3): 31-39. URL: http://ijrn.ir/article-1-317-en.html

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