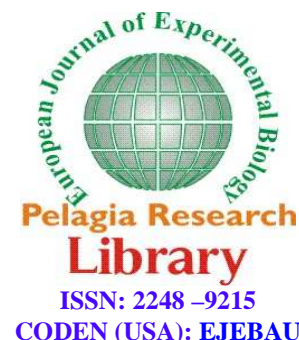




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# Comparison of Body Image in Male Disabled Athletes with both Disabled and Non-disabled Non-athletes

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## ABSTRACT

The present aims at comparing body image in male disabled athletes with both disabled and non-disabled non-athletes. The study adopts a comparative, cross-sectional method. Three groups of participants, each with 50 members, were selected from among the population of disabled athletes, disabled non-athletes and non-disabled non-athletes using cluster random sampling. The subjects were selected from sports places for athletes with disabilities, Kahrizak Disabled Rest Home, and public offices, respectively, and their body images were compared. The instruments used to collect the data included a demographic data sheet and the Physical Self Description Questionnaire (PSDQ) that contains 11 subscales. One-way ANOVA and Newman-Keuls post-hoc test were run to analyze the data. Disabled athletes significantly outperformed both disabled and non-disabled non-athletes in body image across the subscales of strength, endurance, coordination, flexibility, self-esteem, physical activity, sport competence, and general physical self-concept ( $P < 0.001$ ). Besides, disabled athletes significantly outperformed disabled non-athletes in the subscales of appearance ( $P < 0.002$ ), health ( $P < 0.001$ ), and body fat ( $P < 0.12$ ); however, they showed no significant difference with non-disabled non-athletes in these subscales. Due to regular physical activity, disabled athletes had better a body image comparing with both disabled and non-disabled non-athletes. Therefore, it is recommended that facilities be provided for the disabled to participate in sports activities.

**Keywords:** body image, disabled athlete, non-disabled people, disabled non-athletes

## INTRODUCTION

As a social phenomenon, disability has always been rampant in societies so that it has always been considered as an essential problem in terms of the social relations. There have not been constant relations between social and scientific development on one hand and the social status of the disabled on the other hand [1]. As impairment appears and disability symptoms unfold, the disabled lose their self-reliance and the sense of dependence on others grows in them. Decreased self-confidence, developing a negative personality, a sense of incompetence and encumbrance affect the remaining resources in the disabled and induce a feeling of desperation and confusion in them. Recent findings shows that physical exercise helps improve both physical and mental conditions in the disabled through improving mental conditions including emotional states and self-knowledge [1-3].

The emotional spirit pervading a family prompts the family members to help the disabled with their personal activities despite their preference for independence. This causes an internal sense of embarrassment and nurtures a sense of reliance on others in them. Therefore, the disabled lose their self-confidence gradually and tend to be isolated, indecisive and disillusioned [1, 2].

As the health or impairment of every physical or mental dimension affects the other, a thorough perception of the concept of health requires the true perception of physical and mental health. As the body and mind affect each other reciprocally and general health is the outcome of physical and mental health, it is particularly important to study the reciprocal effects of body and mind. It should, however, be noted that it is essential to mark the boundary between body and mind. In the seventeenth century, Descartes separated body and mind as two distinct concepts. That is why physical and mental health was then considered as separate concepts. However, a plethora of research on body and mind has dispelled this notion and proved the integration of body and mind so that the disregard for either one of them is the disregard for health in general. Body and mind are two sides of the same coin so that any impairment in one results in impairment in the other, hence running the risk of impaired general health [1].

As with other mental dimensions, body image is a part of human personality that follows its developmental route and faces fluctuations in certain stages of life such as the occurrence of physical impairment and disability. Under such circumstances, the disabled lose their self-confidence and a sense of dependence on others grows in them. Decreased self-confidence, developing a negative personality, a sense of incompetence and encumbrance affect the remaining abilities in the individual [4].

Smith contends that individuals have a body image of themselves, which is the most significant element in their personality. People may think they are thin, fat, short, tall or something in between. As Khajeh Nouri contends, the way people behave or think precisely corresponds to the mental image they build according to what they hear, see and feel. Body image is what people perceive of themselves and what others think of them. Gorman observes that body image is a mental representation that people hold of them in every instance. Miller and colleagues categorize the perception of one's body and its competence into three levels. The first is the general physical perception that includes the mental image people have of their physical appearance such as skin wrinkles, hair loss, large stomach, and clothing or physical fitness. The second is the internal perception of the body and its function, that is, perception of internal organs that are not visible such as feelings toward the symptoms of cardiovascular diseases, stomach and blood pressure. The third level of perception refers to physical competences that includes mental evaluations of the physical abilities people consider for themselves to achieve physical goals. This level is associated with self-efficacy [4].

What the disabled perceive of their own bodies – their mental body images – significantly influences the development of their self-knowledge. Following the development of self-knowledge and mental body image, the disabled either have positive feelings towards their bodies so that they esteem their own self and consider their disability as only a restriction or have negative feelings towards the self so that they consider their disability as a serious impairment and shy away from the society [5].

Research has shown that regular exercise can positively affect self-knowledge in people. Chavelston and colleagues define self-image as the perception people gain of themselves through experience and inference. They contend that the body image may be affected by intervention programs such as exercise training, physical activity or weight loss regimes [6].

Dijkerso reviewed a number of 22 social-psychological studies to examine the quality of life in the individuals following spinal cord injury (SCI). The results showed that SCI patients had lower mental health comparing with the non-disabled [7].

Jacobs and colleagues compared psychological profiles of wheelchair athletes, wheelchair non-athletes and healthy athletes and reported a significant difference in depression profile between wheelchair athletes and wheelchair non-athletes. In other words, wheelchair athletes scored better in depression profile [8].

Greenwood and colleagues compared mental welfare between wheelchair tennis athletes and wheelchair non-athletes. They found that wheelchair tennis athletes had positive mental welfare, better temperament profile, and lower tension, anger, depression and fatigue comparing with wheelchair non-athletes. They also reported that

wheelchair tennis athletes had higher self-confidence to perform tennis tasks. In sum, the athletes could handle tasks and moves in the wheelchair better than non-athletes [9].

Yehoshua and colleagues investigated the effect of physical activity on self-esteem and body image in young people with disabilities. The results showed that both athletes and non-athletes obtained higher scores in self-esteem and body image following the training program [4]. Gari contends that disorders in mental body image vary among the disabled consistent with their personal characteristics and experiences [6]. Sands investigated the effect of training programs on the attitude of disabled women towards their body using Self-Perception Inventory, Multiphasic Personality Inventory, Social Anxiety Scale and Body Perception Questionnaire. The results showed that physical exercise may increase the physical perception and attitudes towards one's body as much as 50 percent in the disabled [10].

Social and physical outputs are often yielded through participation in sports activities though they are often missed as the disabled fail to participate in such activities. Blind and colleagues examined the effect of sports programs including swimming, physical fitness, weight lifting, Racquetball, tennis, fishing and walking on social and physical self-perception in a number of 12 men (20-36 years old) and 11 women (19-54 years old). They reported that participation in a wide range of sports-recreational activities significantly improved the subjects' perception of their physical condition. It was also a good social experience for the participants to reinforce their awareness of social self-perception [12].

Though many studies have investigated the effect of physical exercise on mental image in both healthy athletes and non-athletes, there have been few studies to examine these effects in the disabled athletes, particularly in Iran. Therefore, the present study aims to compare the body image of disabled athletes with both the disabled and non-disabled non-athletes.

## MATERIALS AND METHODS

The study adopts a cross-sectional, comparative method. The participants were selected from among SCI patients and healthy individuals ranging in age from 25 to 50 using cluster and stratified random sampling. In this regard, the participants were divided into three groups: disabled athletes (N=50), disabled non-athletes (N=50), and non-disabled non-athletes (N=50). The subjects then signed an informed consent form to participate in the study.

To select the disabled athletes, sports places for the disabled were first identified in southern, western, eastern and northern districts of Tehran. Then one or two places were selected in every district, from which a few disabled athletes were taken randomly. The disabled non-athletes were selected using cluster and stratified random sampling from Kahrizak Disabled Rest Home. The non-disabled non-athletes were selected randomly from public offices in Tehran.

Physical Self Description Questionnaire (PSDQ) was used to collect the data. The reliability of the questionnaire was examined by Bahram and Shafie Zadeh (2004), which yielded a reliability coefficient of  $\alpha=0.88$  [4]. A demographic data sheet was also used to collect the data on the subjects' age, education, type of disability, location of the lesion, the cause and length of disability, and the type and intensity of sports activity.

Beside descriptive statistics, inferential statistics including one-way ANOVA and Newman-Keuls post-hoc test were run to analyze the data.

## RESULTS

Table 1 illustrates the mean age and weight in the three groups of participants. As shown in the table, there is no significant difference among the groups in terms of age and weight.

**Table 1. Mean and Standard Deviation of age and weight in the three groups of participants**

Variable	Disabled athletes		Disabled non-athletes		Non-disabled non-athletes		P
	Mean	SD	Mean	SD	Mean	SD	
Age	32.27	8.77	33.54	10.93	33.14	9.80	0.184
Weight	65.43	9.23	67.82	11.23	69.54	10.31	0.092

Table 2. Absolute and relative frequencies of the level of education in the subjects

Level of education	Disabled athletes		Disabled non-athletes		Non-disabled non-athletes	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Illiterate	1	3.3	2	6.6	1	3.3
Elementary	4	13.1	2	6.6	5	16.1
Lower diploma	3	9.9	4	13.1	3	9.9
Diploma	6	19.8	5	16.1	7	23.2
Bachelors'	12	39.5	13	42.6	12	39.5

Table 2 illustrates the level of education in the three groups of participants.

Table 3. ANOVA results of the participants' scores on the subscales of PSDQ

Variable	F	P
Strength	24.37	<0.001
Endurance	57.32	<0.001
Coordination	57.96	<0.001
Health	22.25	0.001
Flexibility	20.65	<0.001
Self-esteem	6.93	0.001
Appearance	31.68	0.002
Physical activity	50.86	<0.001
Body fat	9.14	0.012
Sport competence	60.80	<0.001
General physical self-concept	31.68	<0.001

The results of one-way ANOVA showed a significant difference in the body image among the three groups (Table 3).

Table 4. Newman-Keuls test results of body image in the eleven subscales of PSDQ

Variable	Disabled athletes		Disabled non-athletes		Non-disabled non-athletes	
	Mean	SD	Mean	SD	Mean	SD
Strength	**23.90	3.88	15.78	7.53	20.26	6.12
Endurance	**24.71	2.41	9.88	4.58	18.50	3.37
Coordination	**29.09	6.12	15.46	3.71	23.56	4.90
Health	*37.73	4.89	33.10	9.26	35.72	10.01
Flexibility	**27.78	2.09	16.78	3.22	22.94	3.97
Self-esteem	**32.92	7.36	23.08	6.01	29.98	9.09
Appearance	*26.88	5.41	21.04	7.08	25.00	6.76
Physical activity	**23.00	5.32	10.30	2.70	14.16	6.71
Body fat	*30.00	8.09	25.70	8.16	27.10	10.10
Sport competence	**27.80	3.64	13.88	3.69	19.08	5.41
General physical self-concept	**29.71	4.20	20.22	3.50	24.22	5.82

\*Significant difference between disabled athletes and non-athletes

\*\* Significant difference among the groups

Since the results of one-way ANOVA showed a significant difference in body image among the groups, Newman-Keuls post-hoc test was run to compare the groups in each subscale of body image (Table 4). As shown in the table, disabled athletes outperformed both disabled and non-disabled non-athletes in the subscales of strength, endurance, flexibility, coordination, self-esteem, physical activity, sport competence and general physical self-concept ( $P \leq 0.001$ ). Disabled athletes also outperformed disabled non-athletes in the three subscales of health ( $P = 0.001$ ), appearance ( $P = 0.002$ ), and body fat ( $P = 0.012$ ) though they had no significant difference with non-disabled non-athletes.

## DISCUSSION

With regard to the comparison of body image between the disabled and non-disabled, the present findings showed that non-disabled individuals had a significantly better body image comparing with disabled non-athletes. In other words, the non-disabled outperformed the disabled non-athletes in every subscale of the PSDQ. It appears that disability reduces self-esteem, mental health, and self-concept in the disabled. In this regard, the present findings correspond to the results of several previous studies.

Horvat and colleagues compared the mental characteristics in healthy and wheelchair men and women. They reported that healthy people enjoyed higher mental health and self-concept. The results also showed that the majority of disabilities, resulting in the functional loss in the individual, could become a source of stress and end up with chronic depression. The degree to which these factors influence different people varies in people and commonly depends on individual personality [11].

Participation in sports activities seems to play a mediatory role in increasing self-esteem and self-concept. In other words, participation in physical activities increases physical abilities and fitness in the individual, which in turn changes the way the individual evaluates their abilities. This process has a positive cycle culminating in increased self-esteem and a more positive attitude towards the body [1].

Physical changes in the disabled bring about changes in their mental body image. The type and intensity of reaction to these changes differs in the disabled based on the time, severity and type of disability. In other words, disabled people who suffer from emotional stress due to physical discomfort have poor body images. Besides, with more severe disabilities, self-confidence decreases more dramatically. With regard to the comparison of body image between disabled athletes and non-athletes, the results showed that the former had a better body image in all the subscales of PSDQ comparing with the latter group. This is consistent with previous findings. Golmohamadi (1991) compared self-esteem between disabled athletes and non-athletes and reported a significant difference in the self-esteem between the two groups [5].

Monnazi investigated the mental characteristics of paraplegic disabled athletes and non-athletes. The results showed that sport improved personal, mental and neural characteristics in the subscales of body image in paraplegic patients [12]. The present findings also showed that the disabled athletes had a better body image comparing with non-disabled non-athletes. As several studies have shown the negative impact of disability on self-esteem and mental health, we expected the body image to be higher in non-disabled individuals comparing with the disabled athletes. However, as discussed, the disabled athletes outperformed the non-disabled individuals in eight subscales. Moreover, although the average level of education in the non-disabled individuals was much higher comparing with the disabled (research has shown a positive correlation between the level of education and body image), the present findings revealed that physical exercise had a much higher influence on the body image comparing with the other two factors. The present participants were SCI patients so that all of them were on the wheelchairs and their both legs were paralyzed; however, they had a better body image comparing with the healthy participants. This suggests that regular exercise may effectively remove the adverse effects of disability to the extent that the disabled athletes might have a better body image than the healthy individuals.

## CONCLUSION

By inducing better muscular balance and increasing physical performance in the disabled, physical exercise improves their body image and perception of physical fitness. Physical activity can also prevent the loss of self-confidence and a sense of incompetence resulted from muscular inactivity and indolence which in turn brings about increased fat and misbalance in body composition. Thus, it may lead to increased self-esteem and self-concept in the disabled. The discussion so far highlights the marked importance of physical exercise on body image, particularly among the disabled. Considering the inappropriate beliefs people hold about the disabled and their capabilities, physical activity may help the disabled bear favorable mental images of them and reduce the burden of public opinion on them. This may even encourage a disabled athlete to consider higher abilities in themselves than in non-disabled non-athletes. It is, therefore, recommended that adequate measures be taken to facilitate sport participation in the disabled so that they may eliminate some of the mental problems induced by disability.

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