

# Analysis of the Effect of Recreational Sports Development on Health and Participation of Students in Sports Activities

Fakhrosadat Hashemi, Farshad Tojari\*, Hamid Sajjadi Hezave, Abdolreza Amirtash

Department of Sports Management, Central Tehran Branch, Islamic Azad University, Tehran, Iran

## Article Type:

Original Article

## Article History:

Received: 26 Jan 2021

Revised: 20 Feb 2021

Accepted: 1 Mar 2021

## \*Correspondence:

Farshad Tojari,  
Department of Sports Management,  
Central Tehran Branch, Islamic  
Azad University, Tehran, Iran

far.tojari@iauctb.ac.ir



DOI: [10.29252/jorjanibiomedj.9.1.32](https://doi.org/10.29252/jorjanibiomedj.9.1.32)

## Abstract

**Background and Objective:** Research on how to participate in recreational sports and the factors influencing the choice of these sports are too meager in health areas. Therefore, the aim of this study was to analyze the effect of recreational sports development on health and Participation of students in sports activities.

**Material and Methods:** The present study is descriptive-correlative in terms nature, and is applied in terms of purpose. The statistical population of the study consisted of all university students in Bushehr city, from whom the study sample was picked based on stratified random selection (N=384). To collect data, a researcher-made questionnaire was used and the validity of the questionnaire was confirmed by twelve experts. Also, its reliability was calculated using Cronbach's alpha ( $r=0.91$ ) and composite reliability. In order to analyze the data and examine the fit of the model, structural equation modeling was implemented using PLS3 and SPSS24 software ( $p \leq 0.05$ ). The results of path analysis revealed that the development of recreational sports has a direct and positive correlation with physical health. Also, the effect of recreational sports development on students' participation in sport was significant.

**Results:** The results of factor analysis showed that physical health, mental health, and physical fitness had a significant role in explaining the physical health variable. Also, social aspects, athletic interest and pleasure, athletic performance and athletic skill acquisition had a determining role in the sport participation variable.

**Conclusion:** According to the findings, it can be deduced that in the attention to and research on sport participation in health area, simply reliance on individual characteristics results in Halo error (based on behavioral theories), and to avoid it, it's better to notice the effects of other variables, such as the athletic interest and pleasure, athletic performance, and athletic skill-acquisition.

**Keywords:** Health, Population, Sports

**Highlights**

Development of recreational exercise has effects on physical health and sports participation. Due to its performability in different places, cost-effectiveness and availability, and ease of implementation for different classes and ages of the community it is regarded by sport managers and sport scientists.

**Introduction**

Any society requires a healthy and dynamic population for development and progression. The importance of sport for the health of the community and its members is such that some sociologists consider it the civil religion of contemporary societies (1). In the today's busy world, everyone needs recreation and entertainment, and recreation and entertainment are employed by people as a source of fun and pleasure and (2). Recreation and entertainment can be conducted in the form of active sports activities such as soccer, badminton, etc. and inactive such as chess, intellectual games and more. In either case, people can recreate or entertain themselves with each other, or with the help of recreational and entertaining centers. Reducing the mobility, physical activity and entertainment in today's life, which is due to the development and expansion of facilities and welfare devices and new ways of life, necessitates the need for exercise and recreation and physical training more and more (3). Considering this, keeping regular and progressive physical activities is essential. In the present world, research on issues such as the impact of sports activities on physical and mental health, longevity, wellbeing, social interaction and leisure enrichment has increased the participation of people in sports, in particular, participation in a variety of public recreational sports. Also, recreational sports have been highly regarded

by sport managers and physical education students and sports scientists due to performability in different places, cost-effectiveness and availability, and ease of implementation for different classes and ages of the community (4). Recreation is taken by most people as organized leisure activities for personal and social benefits. However, for the professional manager, the recreation must be understood and perceived as having a domestic and institutional value. One of the main points of learning is that programs and activities should provide participants with a wide choice of opportunities to provide them with experiencing satisfaction and benefits that, instead, helps meet and fulfill individual needs. Today, not only the survival and success of sports organizations depends on the competition in their sport, but also consumers of sporting activities play irrefutable roles (5). To survive in the sports market, one should be alert, awake and dynamic. Dynamicity means being in adaptation with the turns and needs of the exercise environment. A strong sports marketer is the one who can predict the changes and use them in a timely manner. Every move that a sports marketer does is influenced by various environmental factors and affects them somehow. These effects may be very deep or partial. The most important feature of the environment is the change and alteration. There are opportunities, threats and dangers in these alterations and sports marketers must make the most of their opportunities and minimize threats and dangers by studying, assessing and evaluating them. Focusing on the needs of customers and sports audiences is a major driver of sport marketing. Today, many international sports federations and organizations have embraced and adopted new concepts of sports marketing. They have noticed that focusing

on the needs of sports customers means paying attention to the quality of sports, competitions and sports products, and providing services to customers. As a result, these issues are among the latest concepts of sports marketing, and any sports organization that is customer-oriented must become familiar with these concepts (6). One of the important markets that has attracted the attention of sports organizations is the presence of community members in recreational activities, because people in this market are interested due to the inner pleasure and passion. This market takes place during leisure time and is associated with most of the people's desire. This trend comes from the fact that people pay to it freely and without compulsion, and it is not irrelevant to claim it is the focus of people's activities and even one of the main reasons for their employment. Because people work to have comfort and relax in their leisure time and participate in recreational activities, especially via recreational sports (7). Maria Sava (2015) divides leisure activities as recreational activities into four categories: entertainment activities, sports activities, artistic activities and cultural activities. She believes that sports activities include physical activities that individuals use to enhance physical fitness in a different environment from the daily environment, to compete and enjoy, and to excel for skill development or showing power or a combination of the above-mentioned cases. She also believes that some factors are effective in the tendency of individuals to each of the above activities, which cause the inner desire of individuals for these activities, and hence without identifying them scheduling on their leisure time is impossible. As a result, the variety and diversity of a consumer's behavior are due to a variety of factors influencing the individual's behavior

and the motivation of the person to purchase. A consumer's behavior can be influenced by factors such as closeness to the home and the workplace, transportation facilities, prices, quality, up-to-date services, staff qualifications, and advice from others (8). One of the main pillars in explaining people's behaviors in order to participate in a variety of recreational sports is to identify and recognize their motivations and presuppositions.

Determining why people participate in such activities or identifying inhibitors of participation will help managers and planners in the basic planning for the development of recreational sports (9). One of the most difficult issues (and at the same time the most basic issue) in sports participation is the improvement and development of motivational tools. Sports trainers and managers do some motivational programs with the goal of continuing to participate and improve sport performance. However, the development of a model of motivation for sports participation and its continuity needs to recognize the motivations and presuppositions of individuals to participate in sports.

The motivations for people to participate in sports programs are related to important factors such as economic status, socio-economic basis, family background, personal needs, education and advertising. Of course, the impact of each of these factors varies on the quality and quantity to increase participation (10). In adolescents, internal motivation for sports is very strong. Wankle et al. (2009), conducted a study on the adolescents between 7 and 14 years old and showed that internal factors (excitement, arts and personal virtues, individual skills improvement) have the greatest importance and external factors (pleasing others, getting

rewards and prizes, winning the game) are less important, while social factors (making friends) has a moderate importance (11). Today, providing quality services is one of the most important factors for sports participation. The Canadian Health Association in 1993 reviewed the main reasons and motivations for sports participation in fitness programs and recreational activities among 4500 people (aged 10-19 years) and reported five main motivations for participation in recreational sports: joy and cheerfulness, feeling better in life, controlling weight and fitness, releasing energy, and competition. The association also conducted a similar study on adults. Feeling better in life, recreation and entertainment, weight control, flexibility, and the reduction of mental stress in life were important reasons for participation in sports among adults (12). Therefore, motivations such as feeling better in life, weight control and recreation and entertainment between young people and adults are seen as common motives. The results of the research show that the age of people affects their motivation to participate in sports. Gould and Horn (2010) and Gould et al. (1982), in reviewing the research on the participation of individuals in sports programs and activities, concluded that the life cycle and age of individuals were very important determinants of personal motivation for participation in sports. Young people have many incentives to take part in sports. Membership in the club, development and upkeep of skills, fitness, excitement and success in sports competitions are among the main reasons for participation, while motivations such as power over others, independence, aggression, jest and pleasure are less important. The role of gender in the motivations of participation is obvious (13, 14). Some research suggests that among

women, motivations such as recreation, making friends, fitness and beauty are more important. Type of exercise, amount of experience, and age differences of ten years in this topic are not very effective (15). James Wamberi's (2002) study on teenage girls' leisure time shows that they attend sports activity in order to primarily prioritize physical manifestations of this activity rather than potentially enjoy doing the activity itself (16). Herbit Wills (2005) reported that the incentive for sports participation in people over the age of 60 in the United Kingdom has to do with the level of welfare, having free time, as well as health related factors including interest in maintaining fitness and losing weight, beauty and mental health (17). College students are an integral part of the users who choose recreational activities. These people play a significant role in the consumption of sporting goods produced by sports organizations, and as people who play a decisive role in choosing other people to use sporting goods, they are very important; in other words, students being aware of the type, quality, matter, price, etc. of sporting goods consumed are the basis for decision making for many people. For this reason, regarding the topic of this research, it seems necessary to take assistance of students to do the investigation. The present study seeks to find answer to the question whether the development of recreational sports has a significant effect on students' health and participation in sporting activities.

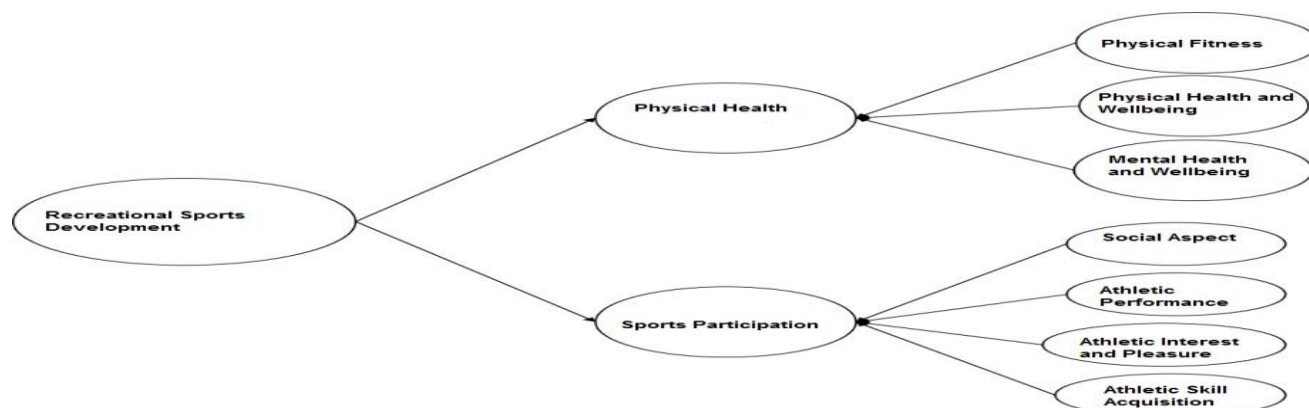
## Materials and Methods

The present study is descriptive-correlative in terms nature, and is applied in terms of purpose, which was performed as a field study. All college students in Bushehr province, from different disciplines and programs, taking part in recreational sports

were primarily considered. In the present study, the minimum sample size was determined 320 based on 16 hidden variables. In other words, for each hidden variable, 20 individuals were identified to be included in the statistical sample (this is much larger than the sample size provided by Krejcy and Morgan tables, so it can provide a good estimate of the community). Finally, 320 volunteers were selected as the sample of study through random stratified sampling. To receive some additional responses, questionnaires were distributed among 400 individuals. Finally, 390 questionnaires were given back from which 384 questionnaires were fully completed and were then analyzed. A researcher-made questionnaire was used to gather the data, which included three sections. In the first part, the demographic characteristics of the subjects are collected. The second part of the questionnaire includes recreational sports development variable, which has 8 questions (questions 1-8), the physical health variable, which has three dimensions (physical and mental health dimension (4 questions), mental health dimension (4 questions) and physical fitness dimension (4 questions)). In the final part of the questionnaire, there was participation in sport variable that included four dimensions

(social aspects dimension (4 questions), athletic performance dimension (3 questions), athletic interest and pleasure aspect (5 questions), and athletic skill acquisition (4 questions)). In this study, the content and face validity of the questionnaire was confirmed by the experts (13 people), also its reliability was calculated using Cronbach's alpha (0.91). In order to analyze the data and examine the fit of the model, structural equation modeling was implemented using PLS3 and SPSS24 software ( $p \leq 0.05$ ). In Figure 1, the conceptual model of research illustrates the processes of the research study.

To analyze the research data, descriptive statistical methods (frequency, percentage, mean, standard deviation) were used to describe the research variables and inferential statistical methods including calculating the construct validity of the questionnaire were used. In this study, first the Kolmogorov-Smirnov test was used to determine the normal distribution of data, then according to the type of distribution, the data were analyzed using parametric or non-parametric statistical tests in SPSS software. Also, Smart Pls software was used to study its factor structure based on confirmatory factor analysis and structural equation modeling and path analysis.



**Figure 1.** the conceptual model of the research

## Result

The research findings were analyzed in two sections: descriptive and inferential. In the descriptive section, some of the demographic characteristics (gender, age, marital status, and level of education) have been reported in the statistical sample ([Table 3](#)).

**Table 1.** Description of the statistical sample

Variable		Number	Frequency (%)
Gender	Man	240	62.5
	Woman	144	37.5
Age (Year)	20-25	194	50.54
	26-30	156	40.62
	Over 30	34	8.85
Marital Status	Single	264	68.75
	Married	120	31.25
Level of education	Associate	40	10.41
	Bachelor	261	67.96
	Master	64	16.66
	PhD	19	4.94

According to [Table 1](#), it can be seen that 62.5% of the subjects in the study were men and 37.5% of them women; also the largest age range of participants (50.54%) in the present study was the age range of 20-25 years and the lowest (8.85) includes participants aged over 30 years old. In the meantime, 68.75% were single and 31.25% were married. Regarding level of education, 10.41% of the subjects were studying at associate level, 67.96% bachelor, 10.41% master and 4.94% at PhD level. In the second part of the descriptive findings of the study, the mean and standard deviation of the variables of the research have been reviewed ([Table 4](#)).

**Table 2.** Mean and standard deviation of research variables

	Variable	Mean	SD
Physical health	Physical health	4.191	0.490
	Physical health & wellbeing	4.062	0.483
Sports participation	Mental health & wellbeing	3.976	0.541
	Social aspect	3.932	0.517
	Athletic performance	4.154	0.618
Recreational sports development	Interest and pleasure	3.791	0.707
	Athletic skill acquisition	3.790	0.623
		3.971	0.594

According to [Table 2](#), it is seen that the physical fitness gains has the highest mean (4.191) and the athletic skill acquisition variable has the lowest mean (3.790). In the following, the coefficient index of R<sup>2</sup> and the GOF formula were used for fit of the structural model ([Table 3](#) and [Formula 1](#)).

**Table 3.** Coefficient index of R<sup>2</sup> in the endogenous variables of model

Endogenous variables	R
Physical health & wellbeing	<b>0.690</b>
Mental health & wellbeing	<b>0.600</b>
Social aspect	<b>0.729</b>
Physical health	<b>0.366</b>
Athletic interest & pleasure	<b>0.810</b>
Athletic performance	<b>0.592</b>
Athletic participation	<b>0.416</b>
Physical fitness gain	<b>0.686</b>
Athletic skill acquisition	<b>0.611</b>

R<sup>2</sup> is a criterion that shows the effect of an exogenous variable on an endogenous variable, and three values of 0.19, 0.33, and 0.67 are considered as the criterion value for weak, moderate and strong R<sup>2</sup> values (Davari and Rezazadeh, 2014). According to the results of [Table 5](#), the R<sup>2</sup> value of the research variables confirms the appropriateness of fit of the structural model

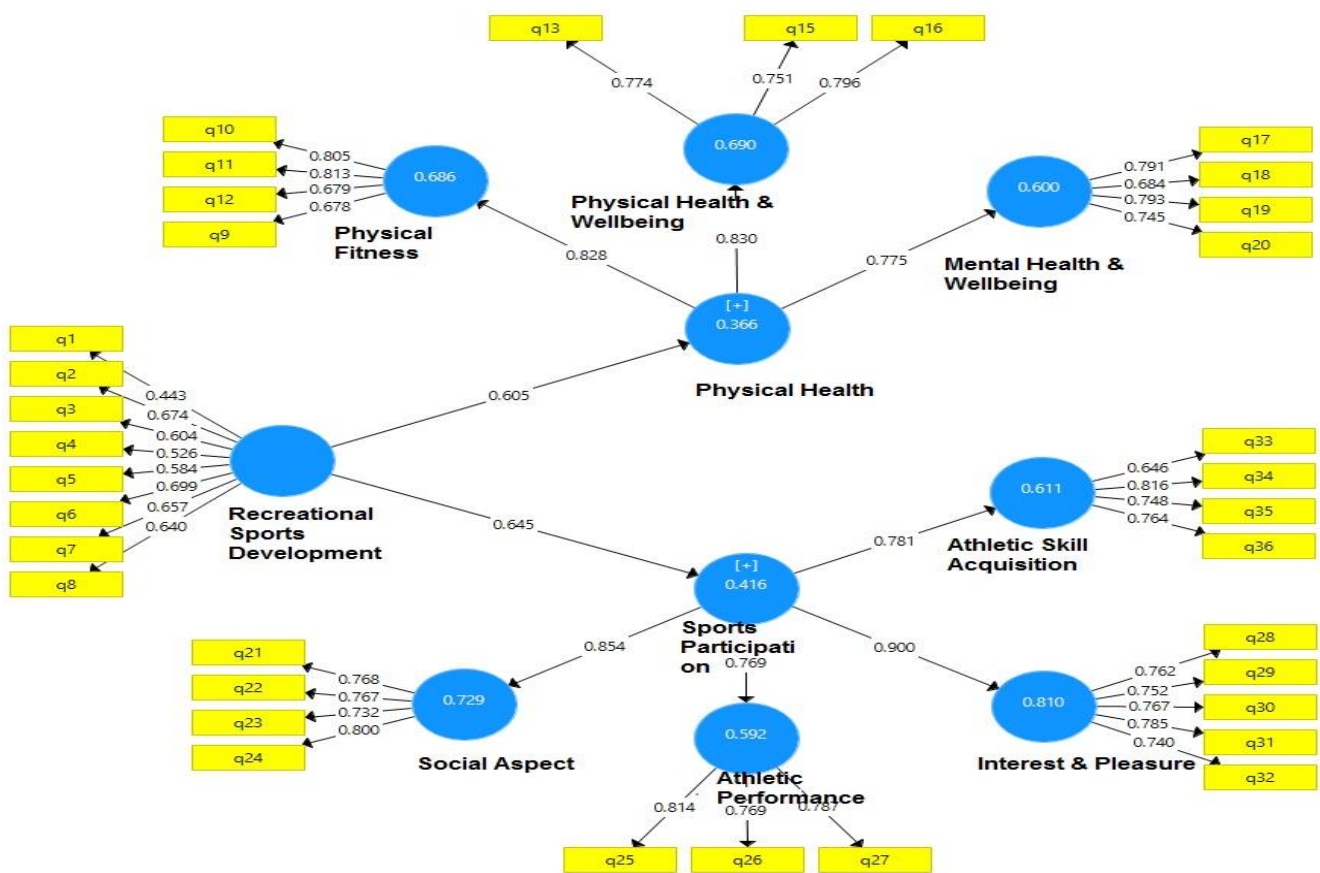
according to the three values of the criterion. In PLS, in order to fit the overall model (both parts of the measurement and structural model), the overall criterion, called GOF (Goodness of Fit), is considered a reliable indicator for fit of the whole model. According to the investigations, GOF can be calculated using the following equation. The values obtained by this formula according to studies by Vtzls et al. (2009) can be classified with three values of 1, 0.25, and 0.36 at three weak, moderate and strong levels. Considering that the mentioned criterion is

equal to 0.636, therefore, according to Vtzls et al.'s (2009) studies, the overall fit of the model is "very strong".

**Formula 1.**

$$\text{Overall fit of the model} = \sqrt{\text{Communalities} \times \overline{R^2}} = \sqrt{.522 \times .604} = 0.636$$

In inferential statistics, to reconfirm the relationship between the components and the related variables, a confirmatory factor analysis was used for all variables. Figure (2) shows the results of the factor loads for the items associated with each variable.



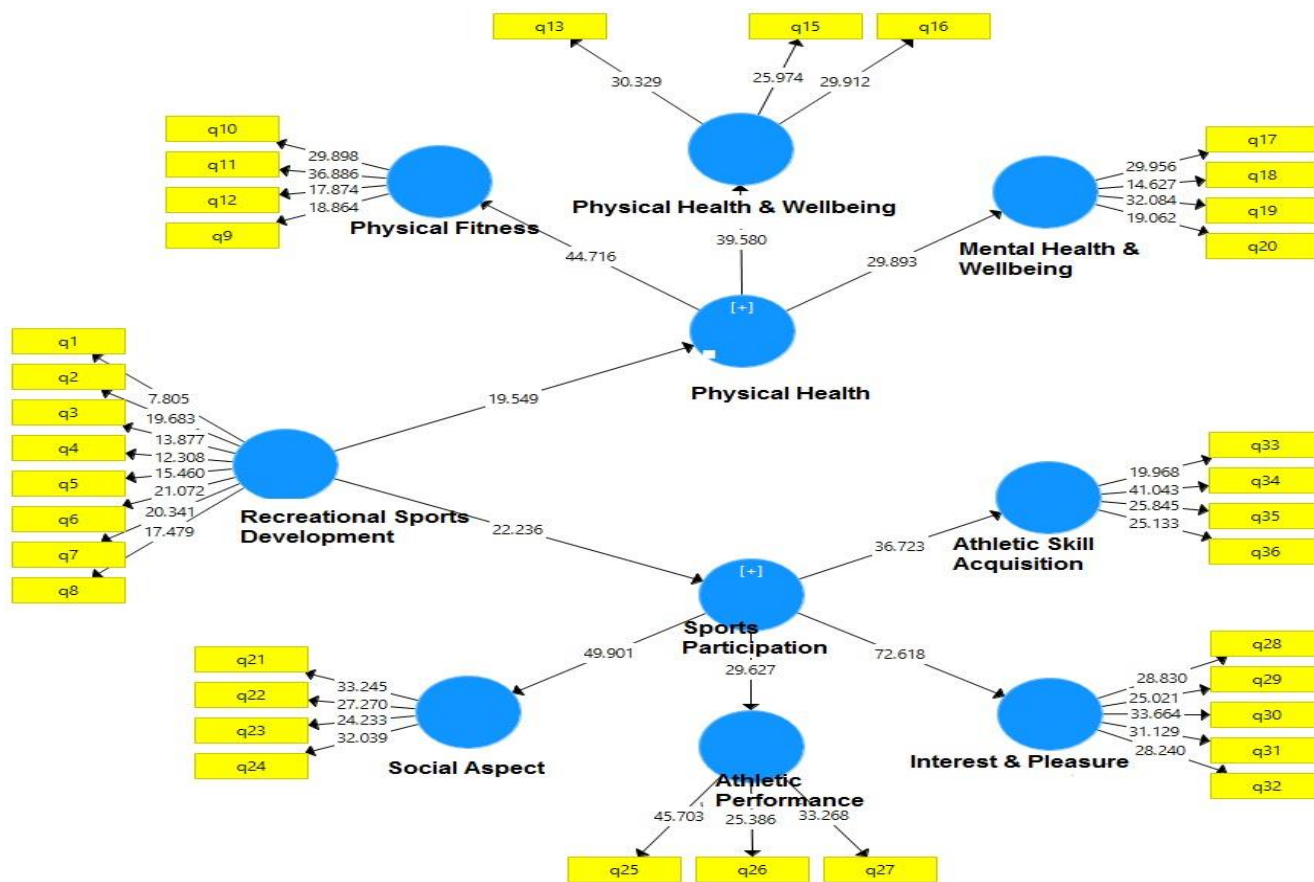
**Figure 2.** The effect coefficient of the research model

As the results of Fig. 2 show, the factor load of most items in the questionnaire was higher than 0.4, and question 14 dealing with the physical health and wellbeing aspect whose factor load was less than 0.4 was removed. After performing confirmatory factor analysis

to examine the research hypotheses, analysis of structural equation modeling was done. In the framework of structural equation model, the research hypotheses were examined and the structural model path was evaluated. Each path corresponds to one of the model's

hypotheses. Testing each hypothesis in done by checking the sign, the size and the statistical significance of the path coefficient (beta) between each latent variable and

dependent variable. [Figure \(3\)](#) and [Table \(4\)](#) show the results of structural equation modeling.



**Figure 3.** Statistical significance of the T value of the research model

**Table 4.** Direct path coefficient values and t statistic related to research variables (Test of research hypotheses)

hypothesis	Path coefficient	T statistic	Level of significance	Result of hypothesis
Development of recreational sports -> physical health	0.605	19.549	0.001	<b>confirmed</b>
Development of recreational sport -> sports participation	0.645	22.236	0.001	<b>confirmed</b>
Physical Health -> Physical Health & Wellbeing	0.830	39.580	0.001	<b>confirmed</b>
Physical Health -> Mental Health & Wellbeing	0.775	29.839	0.001	<b>confirmed</b>
Physical health -> Physical Fitness	0.828	44.716	0.001	<b>confirmed</b>
Sports participation -> Social aspect	0.854	49.901	0.001	<b>confirmed</b>
Sports Participation-> Athletic interest and pleasure	0.900	72.618	0.001	<b>confirmed</b>
Sports participation -> Athletic performance	0.769	29.627	0.001	<b>confirmed</b>
Sports Participation -> Athletic skill acquisition	0.781	36.723	0.001	<b>confirmed</b>



Based on Table 4, all research hypotheses were confirmed ( $P > 0.05$ ) because all significant coefficients of  $t$  are greater than 1.96, which confirms the significance of all questions and relationships among the variables at 95% confidence level; thus other research hypotheses are accepted.

## Discussion

The aim of this study was to investigate the effect of recreational sports development on physical health and sports participation in college students of Bushehr city. According to the results of path analysis, the development of recreational sports has a direct and positive relationship with physical health. The findings of this study are consistent with the findings of Mousavi Gilani *et al.* (2002), Adams *et al.* (2007), Sagatun *et al.* (2007), McConovill (2003; cited in Hemayattalab, 2003), Hassanzadeh Fakhri (2001), and Yaghoubi and Baradaran (2011) (2, 10, 12, 18) and no research was found to be inconsistent with the results of this research. The results of these studies, which each somehow examined the effect of the development of recreational sports and physical fitness on physical and mental health are similar in that they all show the development of recreational sport and participation in sports improved physical and mental health.

Psychologists believe that physical exercises have two direct effects in modifying the mood and increasing the health of individuals; one of which is the release of endorphins (that creates feelings of pleasure), and the other is decrease in the level of cortisol hormone (released in the blood by nerve pressure). As we know, endorphins are natural pain relief medications, and physical exercises with an increase in endorphins levels produce pleasant feelings. In a general summary, it can be

argued that exercise and physical activity have a significant impact on the physical and mental health of individuals involved in such activities. Also, the results showed that the development of recreational sports has a significant effect on the participation of students in sport. The findings of this study are in line with the results of Safari (2012) and Savadi *et al.* (2016), which show that individuals usually have to dominate individual factors and then interact with interpersonal and structural factors in order to be able to participate in sports activities (9, 16). Also, no research was found to be inconsistent with the results of this research. The contribution made to the public sport comprise athletic behavior of people with a health approach that is determined by individual, interpersonal and structural factors. These factors do not determine the ultimate behavior of leisure time, but affect it. These factors make it possible for a person to choose a particular kind of activity from among various activities, and to enjoy participating in it; or, conversely, to prevent the individual from engaging in such activities. Individuals usually have to initially dominate personal factors to participate in sport, then cope with interpersonal factors and ultimately dominate structural factors, so that they can take part in sporting activities in their leisure time. The results of factor analysis showed that variables of physical health and wellbeing, mental health and wellbeing, and physical fitness have a significant role in elucidating the physical health variable. The findings of the present study are consistent with the results of Sagatun *et al.* (2007), Plant and Rubin (2014), and Hasanzadeh Fakhri (2001) (10, 12, 19), and there was no research that was not consistent with the results of this study. Good health is one of the most important blessings

that can be a factor in success in human life. Good health involves the health of the mind, of the psyche and of the human emotions through which humans can achieve in a balanced, satisfactory and productive life. In another part, factor analysis showed that variables of social aspect, athletic interest and pleasure, athletic performance and athletic skill acquisition had an explicit role in the sport participation variable. The findings of the present study were consistent with the results of the study by Madad et al. (2011) (21); while no research was found to be inconsistent with the results of this research. Accordingly, considering that interest or ignorance affect the individuals' level of participation, people can solve this by persuading each other to do sports, and accompany each other in conducting sports activities and group recreational activities. Also, they can prepare themselves for participation in more sports by gaining the necessary knowledge in this regard. Moshkel Gosha (2009) in his research on the development of women's sports participation: identification of motivations and barriers showed that lack of interest, lack of knowledge, and lack of access were accounted responsible for 17% of the external motivation variance. The results show that interpersonal barriers, ignorance, and individual psychological problems are related to individual motivation and can thus affect the individuals' level of participation in sport (22). As a whole, the conclusion is that the overall effect of recreational sports development variable on sport participation and physical health is directly significant. On this basis, it can be deduced that in the attention to and research on sport participation in health area, simply reliance on individual characteristics results in Halo error (based on behavioral theories), and to avoid it,

it's better to notice the effects of other variables, such as the athletic interest and pleasure, athletic performance, and athletic skill-acquisition. In general, it should be said that although participants' behavior in sports activities is directly influenced by external factors such as athletic interest and pleasure, athletic performance, and athletic skill acquisition, such characteristics by affecting sport participation variable can be short-term, mid-term or long-term. Therefore, the behavior of participants in sports activities is also influenced by social factors. These social factors are composed of small groups, family members, and the participant's social status and role; therefore, authorities should carefully consider these factors when formulating participatory policies in their sports activities, because these factors strongly affect the responses of participants. Regarding the managerial implications of this study, sports participation and physical health can be affected by many stimuli. Finally, based on the above findings, it is suggested that the active managers and stake-holders in the field of public sport in the segmentation of their target markets, in addition to developing the facilities and sports infrastructures, should focus on such issues as the participants' interest and collective behavior from different perspectives. As a result, their main focus on management of customer relationship and customer knowledge should be put on increasing the sports participation and the perceptible and direct effects on physical health.

### **Research Limitations and Suggestions**

One of the limitations of this study was that it was done only on students in Bushehr province, so it is difficult to generalize the results to the whole country. On the other hand, access and initial communication with students was difficult. Despite this position,

the researchers were able to communicate with the students through an electronic questionnaire. However, it is suggested that a phenomenological study be conducted in this regard with an emphasis on female university students across the country to identify barriers to sports participation experienced in their living world. On the other hand, due to the quantitative nature of the research, the proposed model has been tested. Therefore, it is suggested that by conducting a qualitative interview, this model be developed in other societies such as managers of sports organizations, coaches and athletes.

## Conclusion

The results showed that the development of recreational exercise has a significant effect on physical health and sports participation. The present study was conducted on the students of Bushehr city in Bushehr province. As a result, the generalizability of the results is limited to Bushehr. Therefore, it is suggested to be tested in other provinces and other areas. Also, quantitative methods for measuring and modeling were used in the present study. Therefore, it is suggested that other researchers use qualitative methods and techniques, such as in-depth interviews and participatory observation, etc., to model and theorize in this regard.

## References

1. Ghodratinama A, & Heydarinezhad S. Relationship between the motivation of sport participation and the physical activity of students of Shahid Chamran University of Ahvaz, sports management studies, 2013; 18: 189-202.
2. Adams T, Moore M, Dye G. The relationship between physical activity and mental health in a national sample of college females. *Women Health* 2007; 2: 69-85. [[DOI:10.1300/J013v45n01\\_05](https://doi.org/10.1300/J013v45n01_05)]
3. Maleki F, Heydarinejad S, & Visia I. Identification of the factors influencing Ahwazi citizens' (lack of) tendency to public sport, the National Conference of Recreational Sports of the Municipality of Tehran, 2011; 203-206.
4. Dehestani M, Shahbazi M, Mahmoudi A, & Khanzadeh, M. Comparing the motivations of participation in public and recreational sports activities among women and men, the National Conference of Recreational Sports of the Municipality of Tehran, 2011; 53-55.
5. Welford A. T. Motives for starting running and competing in full and half marathon events. In *Proceedings of the Sport, Health, Psychology and Exercise Symposium*. London: Sports Council/Health Education Authority.2001.
6. Roozbehani, M, Kamkari K, & Mirzapour AA. Investigating factors affecting the barriers of elderly women's participation in recreational sports activities in Alborz province. 2012; 1(2): 33-42.
7. Fathi S. Sociological Explanation of Students' Sports Participation. *Social Sciences Research*, 2016; 3 (4), 145-173.
8. James K. & Embrey L. Adolescent Gil's leisure: *Annals of leisure research*, 2016: 5: 14-26. [[DOI:10.1080/11745398.2002.10600896](https://doi.org/10.1080/11745398.2002.10600896)]
9. Saffari, M. Designing a Pattern of Public Sports Development in Iran, Ph.D. dissertation, Tarbiat Modares University. 2012.
10. Sagatun A, Soggard A, Bjertnes E, Selmer R. Heyerdahl S. The association between weekly hours of physical activity and mental health: a three- year follow- up study of 15-16 year- old student in the City of Oslo Norway.

- BMC Public Health, 2007; 7: 155-8. [DOI:10.1186/1471-2458-7-155]
11. Wankel, L. M. Exercise adherence and leisure activity: Patterns of involvement and interventions to facilitate regular activity. In Exercise Adherence: Its Impact on Public Health (edited by R. K. Dishman). 2009: 369-396. Champaign, Ill.: Human Kinetics.
  12. Hassanzadeh Fakhri M. Investigating the Relationship between Exercise and Social Adjustment and Self-esteem of High School Girls' Students, Master's Degree in Psychology, Alzahra University. 2001.
  13. Gould D, & Horn T. Participation motives in young athletes. In Psychological Foundations of Sport (edited by L. M. Silva and R. S. Weinberg). 2010: 359-370. Champaign, Ill.: Human Kinetics.
  14. Gould D, Feltz DL, Weiss M, Petlichkoff L. Participation motives in competitive youth swimmers. In Proceedings of the Fifty World Congress of Sport Psychology, Ottawa. 2015.
  15. Gammage R. Possibilities are endless for new Adventure Recreation Center, The Ohio State university, 2014: 32(20): 42-47.
  16. Savadi M, Hematinejad M, Gholizadeh MH, & Goharrostami, HR. Assessment of effective factors in the development of recreational-sports tourism with an emphasis on public sport. Geographical Quarterly (Regional Planning), 2016; 7(1): 201-210.
  17. Canada Fitness Survey. Canadian Youth and Physical Activity. Ottawa: Canada Fitness Survey. 2013.
  18. Mousavi Gilani SR, Kianpour M, & Sadeghi Khorashad M. Comparison of mental health of male athlete and non-athlete students, 2002; 4, 1, 5-43.
  19. Plante TG, & Robin J. Physical Fitness and Enhanced Psychological, Health, Current Psychological Research and Review, 2014: 21: 36-39.
  20. Hemayattalab R, Barazan S & Lahmi R. Comparison of Cheerfulness and Mental Health of female athlete and non-athlete students of Tehran and Payame Noor Universities, Journal of Motion, 2003; 18: 131-140.
  21. Madadi B, Velayati Khaaje S, Salehi Pourmehr H. Investigating the Role of Promoting Factors in Public Sports Participation, the National Conference of Recreational Sports of the Municipality of Tehran, 2011; 85-89.
  22. Moshkelgosha E. Development of Women's Sports Participation: Identifying Motivations and Barriers, Science and Motion and Exercise; 2009; 7(3): 145-154.

**How to cite:**

Hashemi F, Tojari F, Sajjadi Hezave H, Amirtash A. Analysis of the Effect of Recreational Sports Development on Health and Participation of Students in Sports Activities. *Jorjani Biomedicine Journal*. 2021; 9(1):32-43.