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Original Article

The study of regular physical activity status and perception of barriers for performing it in adolescents

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ABSTRACT

Background & Aim: Regular physical activity is a major aspect of healthy lifestyle and control and prevention of many chronic diseases. Also, perceived barriers to physical activity among various populations are different. This study aimed to determine the status of regular physical activity and perceived barriers to performing it in adolescents who studying in the junior high school.
Materials and Methods: This cross-sectional study has used a stratified random sampling with proportional allocation on 280 subjects among the students at the city of Babol. For data collection, three questionnaires for demographic status, physical activity and perceived barriers to physical activity have been used. The data analyzed by using descriptive statistics and chi-square tests.
Results: The results showed that most of students (61.1 %) didn't have regular physical activity, and only 38.9 % had regular physical activity. The most common perceived barriers to physical activity of students has been listed as: lack of relatives' supports (53.6 %), to being far from sports places (35 %), and lack of enough self-confidence (33.2 %).
Conclusions: This study showed the majority of students during the high school years, are not engaging in regular physical activity. As well, there are many barriers to having regular physical activity. Therefore it is necessary to implement health policies about the improving physical activity at a school and community levels, increased access to places for physical activity, and eliminate perceived physical activity barriers.

Introdution

Regular physical activity is an important part of a healthy lifestyle and one of the important factors in maintaining health, improving the level of performance, and controlling and preventing many non-communicable diseases (1).

In fact, regular physical activity brings a healthy lifestyle and, consequently, has positive effects on the physical and mental health of individuals and is considered as an important determinant factor in the health of all age groups(2). Regular physical activity also reduces the costs of treatment with the promotion of healthy life styles (3). This is while 60% of the world population does not practice the minimum recommended level of physical activity (4).

Reduced level of physical activity is the fourth leading cause of mortality and disability (5). Such that annually, two million deaths occurs in the world due to the inactive lifestyles. The World Health Organization (WHO) has estimated that by 2020, about a quarter of the deaths in the developed countries will occur due to the chronic and non-communicable diseases which may be the consequences of the low level of physical activity (6).

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Adolescence is the period of transition from childhood to adulthood and human personality is formed in the late adolescence and early stages of youth (7). Therefore, doing regular physical activity and avoiding sedentary lifestyles during the adolescence period is the basis for the activity pattern in the adulthood (8).

While, The World Health Organization has declared that the daily 30 minutes of moderate physical activity, such as fast walking, has a lot of health effects, evidence suggests that regular physical activity decreases in late adolescence and young adulthood, and this decline is considered as one of the public health problems in most countries of the world (9).Studies have shown that in developed countries, the decline in the physical activity is directly associated with the obesity, weight gain, high blood pressure, and high blood fat, and also with the increased high-risk behaviors such as alcohol consumption, smoking, as well as watching TV for a long time, and using inactive hobbies like playing computer games (10).

In Iran, the outbreak of inactivity rate among women aged 15 to 24 is about 68%, and for men at the same age range is about 14.5% (11). The results of the research by Rostami et al. Showed that the state of regular physical activity of 46.2% of adolescences was low, 28% moderate and 25.8% high(12).

Understanding perceived barriers to physical activity and creating strategies to overcome them may help adolescents make physical activity part of their daily life. Perceived barriers to regular physical activity may be due to the interpersonal factors, such as having a negative attitude towards the regular physical activity, or social barriers, such as lack of provision of sports activities for the leisure time by social institutions(13).

The results of the study conducted by Hosseini et al. (2012) indicated that barriers related to the time, place, financial issues, individual characteristics, parental concerns, and social environment are among the factors that inhibit performing physical activities(14).

Since regular physical activity ultimately leads to the improvement of the quality of life and there is no research on the regular physical activity of adolescents in Babol. Therefore, this study aimed to determine the status and the barriers to regular physical activity in adolescents.

Methods

This is a cross-sectional descriptive-analytic study which was conducted in 2014. The population of the study was (N=11600: 6200 male and 5400 female) studying in seventh and eighth grades of junior high school in Babol City. 280 of them (152 male and 128 female) were selected using the proportionate stratified random sampling.

$$n = \frac{x^2 p(1-p)}{d^2} = \frac{1/96^2 \times 0/25(1-0/25)}{0/05^2} = \frac{0/72}{0/0025} = 280$$

The inclusion criteria consisted of being a junior high school student and lack of an underlying disease or a physical constraint, and the exclusion criterion included lack of willingness of students to complete the questionnaire. The data were collected using three data collection tools including Demographic information questionnaire; The Modifiable Activity Questionnaire for Adolescent (MAQA); and Perceived Barriers to Physical Activity Questionnaire.The Modifiable Activity Questionnaire for Adolescent (MAQA) developed by Aaron et al. (1997) in the United States (15). This instrument includes 4 items which address the status of regular physical activity, watching TV, using computer and playing video games, as well as the amount of participation in sports competitions throughout the year; it is based on the 4-point Likert scale from (never=1, once=2, twice=3, three times or more=4) and if the answer to the first question be three times or more, the physical activity of the individual will be considered as regular. The questionnaire

was translated to Persian and an expert panel of elated health professionals assessed the content validity of MAQA questionnaire. Its reliability was also calculated as 0.80 using Cronbach's alpha.

Perceived Barriers to Physical Activity Questionnaire designed by Sechrist et al. (1987) in the United States; this tool consists of 14 items based on the 4-point Likert scale with the score range of 14-56. Higher scores indicate more perceived barriers to physical activities (16). The studies conducted on the validity and reliability of this questionnaire in Iran indicated that this questionnaire has a high validity and reliability levels and its reliability has been reported to be 0.87 using Cronbach's alpha (17).

The research proposal was reviewed and approved by the Institutional Research Ethics Committee of Tehran University of medical sciences (9111196011). After the researcher provided enough information about the goals and method of completing the questionnaires, the eligible students were asked to complete the questionnaire if they agree.

The data were analyzed by SPSS Software, version 16, using the descriptive statistical (frequency tables, mean, standard deviation) and chi-square tests (X^2).The significance level was considered as $p \leq 0.05$in all tests.

Results

Table 1 shows the demographic data of the students. Among the students participated in this study, 45.4% (n=127) were female and 54.6% (n=153 people) were male; the (43.9% of students were 14 years old. Most of the students (72.5%) had normal BMI (Body Mass Index); and 52.5% lived in the families with a good economic status.

Table 2 represents the status of regular physical activity in the junior high school students of Babol in the school year of 2014-2015. The level of regular physical activity was 47.8% for the male students and 28.3% for the female students, and the total regular physical activity of the studied students was %38.9.

Table 1. Demographic profile of participants

Demographic characteristics	Variable	N (%)
Sex	Girl	127 (45.4)
	Boy	153 (54.6)
Age	≤12 years	34 (12.1)
	13 years	104 (37.2)
	14 years	123 (43.9)
	15 years	19 (6.8)
Body Mass Index	Thin	18 (6.4)
	Normal	203 (72.5)
	Overweight and obese	59 (21.1)
The family economic status	Good	147 (52.5)
	Medium	124 (44.3)
	Weak	9 (3.2)
Father's level of education	Illiterate	2 (.07)
	Elementary and middle school	85 (30.4)
	Diploma	106 (37.8)
	university	84 (30)
Mother's education level	Illiterate	5 (1.8)
	Elementary and middle school	79 (38.2)
	Diploma	126 (45)
	Higher Education	70 (25)

Table 2. Frequency distribution of regular physical activity Status in students

Doing regular physical activity \ Sex	Girl	Boy	Total	Fisher test result
Yes	28.3	47.8	38.9	P value=0.011
No	71.7	52.2	61.1	

Table 2 represents the status of regular physical activity in the junior high school students of Babol in the school year of 2014-2015. The level of regular physical activity was 47.8% for the male students and 28.3% for the female students, and the total regular physical activity of the studied students was %38.9.

According to Table 3, most of the students (42.1%) spend between 2 to 3 hours a day

using computer and watching TV. The results of chi-square test showed no significant relationship between the gender and the time of television and computer use per day (p= 0.39).

Table 4 shows the status of perceived barriers to regular physical activity in the adolescents studying in the junior high schools of Babol in 2014. Based on this table, the main perceived barriers to regular physical activity in the students included the lack of support from other people around the students or the lack of sports activities offered by their friends in the leisure time (53.6%), the long distance (being far away) of sports venues (35%), and the lack of sufficient self-confidence (33.2%).

Based on the results of ANOVA test, there were significant differences in the perceived barriers scores with regard to the variables of age, economic status of family, and gender($P<0.05$).

However, there were no significant differences in the perceived barriers scores between the different groups with respect to the variables of regular physical activity, father's education level, mother's education level, and BMI ($P>0.05$).

Table 3. Frequency distribution of the studied samples with regard to the duration of television and computer use per day

Sex	Girl	Boy	Total	Chi-square test
Frequency / Hours per day	N (%)	N (%)	N (%)	
Less than an hour	2 (1.6)	5 (3.3)	7 (2.5)	0.39
Between one and two hours	37 (29.1)	56 (36.6)	93 (33.2)	
Between two to three hours	59 (46.5)	59 (38.6)	118 (42.1)	
Four hours and more	29 (22.8)	33 (21.6)	62 (22.1)	
Total	127 (100)	153 (100)	280 (100)	

Table 4. Students' responses judging perceived barriers to physical activity

	Perceived barriers to physical activity	N (%)
1	Exercising takes a lot of time from me.	44 (15.7)
2	Exercising makes me tired.	50 (17.7)
3	I do not enjoy exercise.	48 (17.1)
4	Exercising is hard for me.	20 (7.1)
5	Friends and friends who are important to me do not encourage me to exercise.	134 (53.6)
6	Exercising is costly for me	50 (17.7)
7	There are not enough sports facilities for me	64 (22.8)
8	I do not have enough confidence to exercise	93 (33.2)
9	The timetable for using sports facilities is such that I cannot use it	26 (9.2)
10	Sporting places are far away for me	98 (35)
11	I'm scared of the damage caused by exercise	69 (24.6)
12	I do not have enough knowledge about sports	44 (15.7)
13	Exercising my relationships with the family lowers	6 (0.2)
14	Exercising will reduce my time to carry out my responsibilities in the family	67 (23.9)

Discussion

The present study conducted with the aim of "determining the status of regular physical activity and perceived barriers to its performing in adolescents studying in the junior high schools of Babol City in 2014".

In determining the status of regular physical activity in adolescents, the findings showed that 61.1% of the students did not have regular physical activity and only 38.9% of them had regular physical activity. The amount of regular physical activity was 47.8% for the male students and 28.3% for the female students. The results of the study conducted by Ziaee et al. (2006) in Iran showed that 74.4% of students had low physical activity, 21.4% had moderate physical activity, and only 4.1% of them had a high level of physical activity (17).In addition, Haghighi et al. (2012) reported that 39.3% of Urumieh teenagers had no physical activity; 54% had no regular physical activity(18).In another study conducted by Kazemi et al. (2011) on 226 female adolescents in Isfahan, the results showed that about 34.9% of adolescents had an appropriate level of physical activity (19). The results of the study by Morris et al. (2009) on 991 samples at the age range of 14-18 showed that more than 50% of the adolescents did not have an appropriate level of physical activity (20).

With regard to the duration of television and computer use (hours of inactivity) per day, the results indicated that 35.7% of students spent less than 2 hours, 42.1% of them spent between 2 to 3 hours, and 22.1% spent more than 4 hours watching TV or working with computers. However, Haghighi et al. (2012) in their study on 1,600 students in Urumieh showed that 51.4% of the students spent more than 3 hours a day watching television (18). Furthermore, Rezaei Pour et al. (2008) found that 33.7% of teenagers spent 5 hours or more watching TV and using computer per day, and only 20.4% of them spent less than 2 hours watching TV or using a computer (20) Singer et al.(2017) showed that the percentage of watching TV and playing video games is 72% and the proportion of non-watching TV and video games is 28%, also we found that the mothers of children with obesity sits a large period of time in front of TV with their children, so the more hours of watching will lead to children obesity, because the viewer is always a negative recipient(21) Osterman et al(2014) found that Among youth aged 12-15, girls (80.4%) were more likely to use the computer 2 hours or less daily when compared with boys (69.4%). Fewer non-Hispanic black youth aged 12-15 (53.4%) reported watching 2 hours or less of TV daily than non-Hispanic white (65.8%) and Hispanic (68.7%) youth. Excessive screen-time behaviors, such as using a computer and watching TV, for more than 2 hours daily have been linked with elevated blood pressure, elevated serum cholesterol, and being overweight or obese among youth(22) . The results show that since adolescence is the period of self-interest and independence, the individuals' desire to accompany and be with the friends also increases during this period. In researcher's experience, adolescents of Babol mostly prefer to spend more time chatting with their friends rather than watching TV or working with computers; so the duration of using computers and watching TV was reported to be lower compared to adolescents of other cities.

In the study of the status of perceived barriers to regular physical activity in the adolescents, the findings showed that the main perceived barriers to regular physical activity included the lack of support from other people around the students or the lack of offering sports activities by friends in the leisure time (53.6%), long distance from the sports venues (35%), lack of sufficient time due to the commitment to school, family, and educational systems (23.9%), and lack of sufficient self-confidence (33.2%). Based on the results of the study done by Bush (2010), the main perceived barriers to regular physical activity were

associated with the lack of resources and facilities(15%), lack of sufficient self-esteem (43%), lack of adequate time due to the commitment to school, family, and educational systems (13%), medical problems (9.5%), and lack of social supports (19.5%) (23). The findings of the study conducted by Hosseini et al. (2012) showed that barriers related to the time, place, financial issues, personal characteristics, parents' concerns, and social environment are among the factors that inhibit regular physical activity. The obtained results on the perceived barriers to regular physical activity vary among multiple populations, and this difference can be due to the unique cultural and social characteristics and the state policies governing each society (22). The results indicated that the mean score of the perceived barriers to regular physical activity is 26.04 ± 5.9. Also, 66.8% of the students perceived fewer barriers and 33.2% of them perceived more barriers than the average level. The differences in the perceived barriers scores were significant among the different groups with regard to the variables of age, economic status of the family, and gender (P <0.05).However, no significant differences were found in the perceived barriers scores between the different groups with respect to the variables of regular physical activity, father's education level, mother's education level, and BMI (P >0.05).

In the study of Agha Molaei et al. (2009), the mean scores for the perceived barriers to regular physical activity were calculated as 31.9 ± 1.6. Also, the main perceived barriers identified in the above-mentioned study included the long distance of sports venues, lack of sports facilities, and lack of proper scheduling for the use of sports facilities by the participants of the study (24). Comparison of the findings of the present study with the above-mentioned study reveals an obvious difference in the perceived barriers to regular physical activity scores in these two researches. One of the possible reasons for this difference can be due to the difference in samples and the impact of individual and social factors on the people's perceptions of the barriers to regular physical activity. Likewise, the perceived barriers to regular physical activity are different between these two studies, and this difference is normal and can be due to the differences in the cultural and social characteristics of participants as well as the sample differences.

Finally, it can be stated that as adolescents' health behaviors, including the regular physical activity, have a significant effect on their health status, the finding of this study indicating a high level of inactivity and sedentary behaviors in the adolescents studying at the junior high schools of Babol City should be considered. Due to the mission of the community health nursing in identifying the health problems of adolescents, the inactivity problem should be identified and addressed.

Among the limitations of the present study is that it was only conducted on the students of a specific grade (junior high school students); it is recommended that future studies include other grades and conduct the same study with the different age groups, including the youth and adults. It is also suggested to conduct some other researches in line with the present study in different cultures and regions of Iran in order to create some hypotheses through the comparison of results. This study showed the majority of students during the high school years, are not engaging in regular physical activity. As well, there are many barriers to having regular physical activity. Therefore it is necessary to implement health policies about the improving physical activity at a school and community levels, increased access to places for physical activity, and eliminate perceived physical activity barriers.

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Conflict of interest: None

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