

Physical Activity in Adolescent Girls and their Perceptions of Obesity Prevention in Shahr-e Kord, Iran

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Abstract

Background: Regular physical activity (PA) has positive effects on physical, psychological and social health in the individual and the community. Reduced PA is a major global problem that is increasing in prevalence every day. The present study aimed to determine the status of PA among adolescent girls and their perceptions of obesity prevention.

Materials and Methods: The present descriptive-analytical study was conducted on 308 randomly-selected female high-school students in Shahr-e Kord, Iran. Data were collected using a researcher-made questionnaire based on the Health Belief Model and the Standard Physical Activity Questionnaire and were then analyzed in SPSS-16 using statistical tests including the Chi-square test and Pearson's and Spearman's Correlation Coefficients.

Results: According to the results, 217 (70.1%) of the adolescents had light PA, 84 (27.3%) had moderate and only 8 (2.6%) had severe physical activity. The adolescents obtained mean scores of 39.61 ± 19.46 in knowledge, 31.88 ± 15.04 in perceived susceptibility, 34.76 ± 19.82 in perceived severity, 43.11 ± 2.6 in perceived benefits of PA and 39.94 ± 1.93 in perceived barriers. The mean score of perceived susceptibility, perceived severity and perceived benefits were higher in those with moderate physical activity compared to those with light physical activity ($P < 0.001$).

Conclusion

Given the status of PA in the participating adolescents and their low knowledge and poor perceptions of obesity and its relationship with regular physical activity, it is necessary to develop and implement health education and promotion interventions that aim to raise knowledge, generate interest in physical activity and its regular practice and, more importantly, make this behavior persistent.

Key Words: Adolescent, Health Belief Model, Physical activity.

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1- INTRODUCTION

The World Health Organization (WHO) defines physical activity (PA) as "any bodily movement produced by skeletal muscles that requires energy expenditure". The WHO recommends a minimum of 60 minutes of moderate to severe PA per week for 5 to 17 year-old children and adolescents (1). Many factors have come together in the modern world to dramatically reduce human mobility and activity. Reduced activity is the cause of many diseases that were absent from the ancient world, when the early humans performed muscular activity on a regular basis. The use of automobiles, the mechanization of tasks, the emergence of sedentary professions such as businesses and administrative jobs and indolence have all come together to dramatically reduce muscular physical activity and to even eliminate it altogether in many cases (2). Individuals' physical activity depends on many factors, including: age, gender, job, education, and access to exercise facilities, socio-economic and especially cultural factors, the attitude toward PA, and supportive environment and policies (3).

Throughout the world, 30% of individuals aged over 15 have insufficient PA, and an annual of 3.2 million deaths occur due to insufficient PA. Studies conducted on different populations reveal a low physical activity and a tendency toward sedentary living, especially among girls (1, 4-7).

Obesity has now developed a public health problem and its occurrence stays to increase in both developed and developing countries (8), the growing occurrence of child hood obesity and it's credited socioeconomic and public health problem is an actual danger for developing countries (9). Previous studies have demonstrated that, after their school hours, adolescents spend a great amount of time

on sedentary sitting activities such as watching TV and video games (10, 11) and have no motivation for behavior change or any knowledge about its importance. The barriers to having regular PA include the lack of social support, the difficulty of forming new habits and the conflicts with the current lifestyle (12).

The other barriers to lifestyle reform include the adolescents' belief that obese people have a greater physical strength and are less vulnerable to impacts and diseases compared to their slim peers, the lack of access to facilities and resources, laziness to exercise and requiring to be pushed and monitored by others despite having the right conditions for making lifestyle changes (13). Tavasoli and Hassanzadeh reported the score of perceived barriers to PA according to the examined adolescents as 35.77 (14); Hassani et al. reported this score as 29.7 (15).

To address this issue, we need to provide comprehensive scientific evidence. The Health Belief Model is one of the oldest (16,17) and most effective behavior change models that assesses the perceived susceptibility, severity, benefits and barriers to a specific behavior, such as regular physical activity.

Overall, most Iranian adolescents have no desire to increase their PA levels and suffer from very low levels of PA. Identifying the main factors involved in these behaviors and promoting exercise and PA in this age group can contribute significantly to the maintenance and promotion of their health. The present study was conducted to determine the status of PA among female high-school students and their perceptions of obesity prevention in Shahr-e Kord, Iran (**Figure.1**).



Fig.1: The location of Shah-e Kord, Iran

2- MATERIALS AND METHODS

2-1. Study design and Population

The present descriptive-analytical study was conducted in girl high-schools in Shahr-e Kord, Iran, over a period of five months in the academic year 2012-2013. According to Education status, the city was divided into 2 regions, and then 4 schools were selected randomly from each region. A total of 308 first-year students were randomly selected from eight schools using the attendance lists and each were given a code.

2-2. Measuring tools

Researcher made questionnaire was used based on the Knowledge and HBM constructs in six sections:

- General characteristics (8-question),
- Knowledge(8-question),
- Perceived susceptibility(6-question),
- Perceived severity(5-question),
- Perceived benefits from regular PA (5-question),
- Perceived barriers to PA (8-question).

The variables examined included the student's age, parents' age, occupation and

education, household size and the student's body mass index (BMI). The students' BMI was measured by first recording their weight on a digital Camry scale with a precision of 100 grams and with their excess clothing and shoes removed and while standing still. The researcher than hung a rigid tape measure vertically on the wall and measured and recorded the students' height in standing position with the shoulders in normal position and the shoes removed. The students' BMI was then calculated by their weight in kilograms divided by the square of their height in meters (m^2). Measuring of student's weight was done with seca scales with accuracy of 0.5 kg. Place the scale on firm flooring, have the adolescent take away shoes and heavy clothing, Have the adolescent stand with both feet in the center of the scale. Measurement of student's height was done with stadiometer with accuracy of 0.5 cm). Take the height measurement on flooring that is not carpeted and against a flat surface, have the adolescent stand with feet plane, together, and against the wall. Make certain legs are straight, arms are at sides and shoulders are level. Assure the back of the student's body touches/has Contact with the stadiometer at some point, preferably with heels, buttocks, upper back and head touching the calculating surface.

The Standard Physical Activity Questionnaire was used to measure the students' physical activity (18). The questionnaire covers activities such as walking, cycling, swimming, running, jogging, basketball, volleyball, football, bodybuilding and fitness exercises, aerobic exercises, yoga, stretching exercises, tennis, watching TV, and browsing the web, reading and hiking or mountain-climbing. The students were asked to report the frequency and duration of their participation in each of these activities over the last seven days and were then assigned to either the light, moderate or

severe activity groups depending on their activity levels, which were determined by calculating the severity of their combined physical activities given their median energy expenditure in the last seven days.

The activities that lasted less than 10 minutes were not taken into account. Whenever a participant's moderate and severe activities, including walking, reached 600 Met-minutes /week for the past five days, the severity of her physical activity would be taken as moderate. When the total energy expenditure for severe physical activities reached 1,500 Met-min/week for at least three of the entire seven days or when the total energy expenditure for performing a combination of moderate and severe activities or walking reached a minimum of 3,000 Met-min/week for the last seven days, the participant's physical activity would be taken as severe. When the participant reported none of these activities, her PA level was taken as low or light (19).

The constructs of the Health Belief Model measured in this study include: knowledge, perceived susceptibility, and perceived severity, perceived benefits from regular PA and perceived barriers to PA. Knowledge consisted of eight items (for instance, "How often should an adolescent exercise?" and "How much exercise does an adolescent need in order to stay healthy?"). The perceived susceptibility construct consisted of six items (for instance, "I am very likely to get fat" and "I am concerned about getting fat"), which were scored based on a 5-point Likert scale with responses including: "totally disagree", "disagree", "no comments", "agree" and "totally agree".

The perceived severity construct consisted of five items (for instance, "The thought of getting fat scares me" and "If I get fat, I will be more likely to develop different diseases"), which were scored based on a 5-point Likert scale with responses including "totally disagree", "disagree",

"no comments", "agree" and "totally agree". The construct of the perceived benefits of regular PA consisted of five items (for instance, "Exercise to prevent obesity helps better tone my body" and "When I exercise regularly to prevent obesity, I feel really good"), which were scored based on a 5-point Likert scale with responses including "totally disagree", "disagree", "no comments", "agree" and "totally agree".

The construct of the perceived barriers to regular PA consisted of eight items (for instance, "I think that I lack the strength to perform regular exercise", "My family discourages me from exercising" and "I have no place to exercise"), which were scored based on a 5-point Likert scale with responses including "totally disagree", "disagree", "no comments", "agree" and "totally agree". The "totally disagree" response was given a score of 0, the "disagree" response a score of 1, the "no comments" response a score of 2, the "agree" response a score of 3 and the "totally agree" response a score of 4.

The mean score was calculated from 100 and by dividing the total number of items in each construct by the highest score in that construct multiplied by the total number of items in that construct and then multiplied by 100. In knowledge, correct responses were given a score of 1 and wrong or "no comments" responses a score of 0. To assess the validity and reliability of the questionnaire, its face validity was determined by distributing a complete list of the developed items among a group of 30 female high-school students with demographic and socio-economic features that matched those of the target population. The questionnaire items were assessed by this group in terms of difficulty (understanding the words and items), relevance (of the items to the questionnaire dimensions) and ambiguities (the likelihood of an inaccurate understanding of the items or ambiguities

in the meaning of the words) and their comments were implemented. To assess the qualitative content validity of the questionnaire, five experts in health education were asked to examine how much the items reflected the concept in question and its dimensions. To assess the quantitative content validity of the questionnaire, the content validity ratio (CVR) and the content validity index (CVI) were used. Items with a CVR above 0.59 were kept. The CVI obtained for the different sections of the questionnaire varied from 0.72 to 0.8. The internal consistency of the questionnaire was assessed by calculating the Cronbach's alpha value of each section of the questionnaire, which was reported as 0.82 for knowledge and as less than 0.7 for the constructs of the Health Belief Model.

2-3. Inclusion criteria

The study inclusion criteria consisted of being a first-year female student in a public high-school in Shahr-e Kord, giving an informed written consent, willingness to participate in every stage of the study, and a Body mass index (BMI) less than 25 (Table-1).

2-4. Exclusion criteria

The study exclusion criteria consisted of being older than 15 years, unwillingness to participate, and the student's absence or transferring to another school and partial completion of the questionnaire.

2-5. Ethical considerations

A formal letter of introduction was obtained from Shahid Beheshti University of

Medical Sciences- Tehran to the Educational Administration of Chaharmahal Bakhtiari province. To select the schools, letters of introduction were obtained from this administration addressed to Shahr-e Kord school districts 1 and 2, from whom a list was obtained of all the eligible schools in the districts. After randomly selecting the schools and obtaining the agreement of the school heads for carrying out each stage of the study and making the necessary arrangements to avoid interference with the work of the teachers and heads and the students' homework and school work, the researcher entered the classrooms and briefed the students on the study objectives and ensured them of the confidentiality of their data and obtained their consent for participation in the study. The researcher took utmost care to avoid any physical and mental harm to the students and thus distributed the questionnaires among the students to complete and submit.

2-6. Data analyses

Data were analyzed using Chi square and Pearson's Correlation Coefficients using SPSS-16. Descriptive statistics were performed to discover means \pm standard deviation (SD) for incessant variables and percentage (%) for definite variables, correspondingly. Pearson's and Spearman's correlation coefficient was implemented to reveal associations between physical activity and the HBM constructs. For altogether tests, the meaning level of α (P-value) was considered as 0.05.

Table-1: The International Classification of adult underweight, overweight and obesity according to BMI

| Classification | BMI(kg/m ²) | |
|-------------------|--------------------------|---------------------------|
| | Principal cut-off points | Additional cut-off points |
| Underweight | <18.50 | <18.50 |
| Severe thinness | <16.00 | <16.00 |
| Moderate thinness | 16.00 - 16.99 | 16.00 - 16.99 |
| Mild thinness | 17.00 - 18.49 | 17.00 - 18.49 |

| | | |
|-----------------|---------------|---------------|
| Normal range | 18.50 - 24.99 | 18.50 - 22.99 |
| | | 23.00 - 24.99 |
| Overweight | ≥25.00 | ≥25.00 |
| Pre-obese | 25.00 - 29.99 | 25.00 - 27.49 |
| | | 27.50 - 29.99 |
| Obese | ≥30.00 | ≥30.00 |
| Obese class I | 30.00 - 34.99 | 30.00 - 32.49 |
| | | 32.50 - 34.99 |
| Obese class II | 35.00 - 39.99 | 35.00 - 37.49 |
| | | 37.50 - 39.99 |
| Obese class III | ≥40.00 | ≥40.00 |

Source: Adapted from WHO, 1995, WHO, 2000 and WHO 2004.

3- RESULTS

The average of student's age was 13.86 ± 1.3. A total of 85.92% of the participants had a BMI of 18.55 to 24.99, 45.5% had fathers who were younger than 40 and 73.7% had mothers who were 30-40 years old. A total of 13% of participants' mothers and 12% of their fathers had university education. A total of 22.4% of their fathers were self-employed, 48.7% were office employees, and 19.8% were manual laborers. A total of 76% of participants' mothers were housewives, 11.4% were office employees and 12.7% were self-employed. A total of 216 (70.1%) of the participants had light, 84 (27.3%) had moderate and only 8 (2.6%) had severe physical activities. The results of the Chi-square test showed no significant relationships between the level of PA and demographic details including parents' age, occupation and education ($P>0.05$) (**Table-2**).

The participants received scores of 39.61±19.46 in knowledge, 31.88±15.04 in perceived susceptibility, 34.76±19.82 in perceived severity, 43.11±2.6 in perceived benefits of physical activity and 39.94±1.93 in perceived barriers to PA (**Figure.2**). Mean scores of constructs of Health Belief Model (HBM) suggest the important fact that adolescent girls have relatively poor knowledge about physical activity, duration and types of physical

activity needed by an adolescent, etc. With respect to the mean score obtained in perceived susceptibility, it should be said that adolescent girls have little sensitivity to problems that can arise from lack of physical activity. Perceived severity is indicative of the costs incurred by the individual and problems that can arise as a result of lack of physical activity. The present study results showed that adolescent girls have an unacceptable attitude toward this issue. Mean score of perceived benefits is relatively middle, and suggests that adolescent girls have a relatively favorable attitude toward benefits of physical activity.

The results obtained suggest direct and significant relationships between knowledge and perceived benefits, knowledge and perceived susceptibility, perceived susceptibility and perceived severity, and also between perceived benefits and perceived severity in relation to obesity prevention. Direct and significant relationships were also, observed between perceived susceptibility and the father's occupation, perceived barriers and the father's occupation, perceived benefits and the mother's age and occupation, and between knowledge and the mother's age and occupation ($P<0.05$) (**Table -3**). Adolescents with employed fathers showed higher sensitivity to the issue that they may be at risk of obesity and other related diseases

by not having physical activity. Girls with younger mothers scored higher in perceived benefits from physical activity. Girls with self-employed fathers reported fewer barriers to performing physical activity. Adolescent girls with working mothers reported lower scores in perceived benefits from physical activity. The mean scores of perceived susceptibility, severity and benefits were higher in those with moderate than in those with light PA ($P<0.01$).

In other words, better and more frequent physical activity was performed by those who felt more exposed to the risk of problems and consequences of lack of physical activity and were aware of the costs and issues involved, and believed in the benefits of physical activity.

Mean score obtained in perceived barriers shows existence of problems and barriers to PA that prevent girls from properly and adequately perform activities.

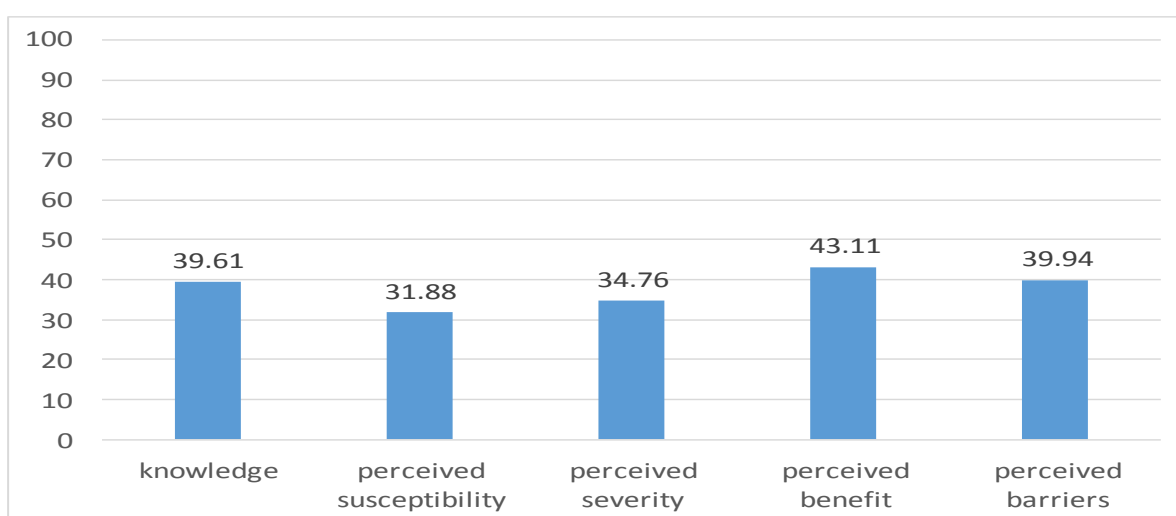


Fig.2: Mean Scores of Health Belief Model Constructs

Table-2: The distribution of physical activity levels in the adolescent participants and its relationship with their parents' age, occupation and education

| Variables | | Light Activity | Moderate Activity | Severe Activity | Test Results |
|------------------------|-----------------|----------------|-------------------|-----------------|--------------|
| Father's Age (in year) | Below 40 | 96 | 41 | 3 | 0.937 |
| | 40-50 | 98 | 34 | 4 | |
| | Over 50 | 22 | 9 | 1 | |
| Mother's Age (in year) | Below 30 | 33 | 13 | 0 | 0.828 |
| | 30-40 | 159 | 61 | 7 | |
| | Over 40 | 24 | 10 | 1 | |
| Father's Occupation | Unemployed | 4 | 3 | 0 | 0.920 |
| | Manual laborer | 39 | 20 | 2 | |
| | Self-Employed | 107 | 39 | 4 | |
| | Office Employee | 50 | 17 | 2 | |
| | Other | 16 | 5 | 0 | |
| Mother's Occupation | Housewife | 160 | 66 | 8 | 0.420 |
| | Self-Employed | 28 | 7 | 0 | |
| | Office Employee | 28 | 11 | 0 | |
| | | | | | |

| | | | | | |
|--------------------|---------------------|-----|----|---|-------|
| Father's Education | Illiterate | 6 | 2 | 1 | 0.664 |
| | Elementary School | 14 | 8 | 0 | |
| | Middle School | 73 | 22 | 3 | |
| | High School Diploma | 99 | 40 | 3 | |
| | University Degree | 24 | 12 | 1 | |
| Mother's Education | Illiterate | 0 | 2 | 0 | 0.155 |
| | Elementary School | 10 | 2 | 1 | |
| | Middle School | 48 | 18 | 4 | |
| | High School Diploma | 124 | 49 | 3 | |
| | University Degree | 34 | 13 | 0 | |

Table-3: The correlation coefficients between students' knowledge and perceptions and demographic variables

| Variables | Father's age | | Mother's age | | Father's job | | Mother's job | | Father's education | | Mother's education | |
|--------------------------|--------------|--------|--------------|-------|--------------|-------|--------------|-------|--------------------|-------|--------------------|-------|
| | P.V | r | P.V | r | P.V | r | P.V | r | P.V | r | P.V | r |
| Knowledge | 0.081 | 0.019 | 0.041* | 0.017 | 0.832 | 0.017 | 0.021* | 0.041 | 0.351 | 0.092 | 0.471 | 0.041 |
| Perceived susceptibility | 0.132 | 0.085 | 0.543 | 0.052 | 0.006* | 0.037 | 0.512 | 0.081 | 0.832 | 0.100 | 0.923 | 0.043 |
| Perceived severity | 0.061 | 0.100 | 0.541 | 0.053 | 0.052 | 0.021 | 0.418 | 0.112 | 0.317 | 0.760 | 0.342 | 0.081 |
| Perceived benefits | 0.061 | -0.034 | 0.003 | 0.043 | 0.510 | 0.142 | 0.026* | 0.054 | 0.087 | 0.048 | 0.077 | 0.012 |
| Perceived barriers | 0.412 | 0.201 | 0.061 | 0.372 | 0.026* | 0.054 | 0.058 | 0.234 | 0.072 | 0.061 | 0.063 | 0.086 |

P.V: P value.

4- DISCUSSION

Regular PA is a means of strengthening the immune system and preventing non-communicable diseases; it can also, exert positive psychological effects by reducing anxiety and depression and thus enhance self-esteem. Physical activity also has economic benefits through reducing healthcare costs and increasing productivity and is associated with a healthier social and physical environment (20, 21). Adolescence is a critical period for obesity and weight gain and adolescent obesity is associated with adult mortality (22). The increased prevalence of obesity among adolescents is the result of an imbalance between the energy received and the energy expenditure (23). In recent decades, energy expenditure has decreased

in adolescents (24) and their PA patterns have changed, which is the result of the longer hours spent watching TV, the emergence of video games and the internet, and the less time dedicated to physical activity in schools and in the community in general (25).

The results obtained suggest direct and significant relationships between perceived susceptibility and the father's occupation, between perceived barriers and the father's occupation, the mother's age and occupation and perceived benefits, and also, between knowledge and the mother's age and occupation. In a study by Akbari et al., no significant relationships were observed between the mother's occupation and education and the perception of obesity (26). The absence of a relationship

between the parents' education and their perception of obesity in the present study can be attributed to the parents' lack of knowledge about the negative consequences of obesity and the issues affecting health; however, cultural factors also play a key role. In one study, Campbell et al. reported no significant relationships between demographic variables and mothers' perceptions (27), while Amy et al. reported a direct relationship between the mother's education and her perception of obesity, as shown by the higher prevalence of obesity among the children of less-educated mothers (28), which may be attributed to cultural, social, ethnic and racial factors. Some parents regard a certain degree of excess weight acceptable in their young children and consider it a sign of health and longevity and thus make no efforts to control their children's weight when they are slightly overweight. Moreover, the lack of adequate control over their adolescent children as a result of the parents' employment can affect the process of obesity in adolescents and their perception of it. Working mothers, exhausted from a day of work tend to not accompany their children in physical activities and do not discuss the importance of these activities either and may therefore contribute to the lack of motivation for and belief in exercise in children and adolescents. Moreover, for many parents, studying and doing homework are the main pillars of an adolescent's life that take priority over all other matters. The family instills this belief in their adolescent children that academic achievement is the most important goal in life that ensures prosperity. As a result, the adolescent chooses, whether willingly or reluctantly, behavior patterns that are in line with her main goal in life, which is academic achievement, and thus leaves no time in her life for physical activity and does not even believe it to be crucial and beneficial.

In one study, Huberty et al. examined the performance of regular PA, especially after the school hours, because they had noticed that children's activity is limited to the school hours and that no physical activity is pursued by them afterwards. They argued that children should be brought up with healthy lifestyle habits (29). The results of the present study showed that the mean scores of perceived susceptibility, severity and benefits were higher in the participants with moderate PA than in those with light PA ($P < 0.01$). This finding confirms that people who consider themselves more prone to the complications caused by sedentary living have a better perception of these issues and are aware of the benefits of PA, including the good feeling after a workout, the better and more attractive body shape and the prevention of obesity and many other diseases, and thus have higher levels of physical activity. The results also, showed that adolescents have an inadequate knowledge of the severity and type of physical activity that they need and the means to its accomplishment. The results of the present study are consistent with those obtained by Huberty et al. (29), Neumark-Sztainer et al. (30), Annesi et al. (31), Fenn et al. (32), Hertz et al. (33), Simon et al. (34), Azadi et al. (35) and Aghamolaei et al. (36).

Knowledge is a critical issue, since projecting a positive attitude toward a certain behavior and performing it. Increasing knowledge is the first step to lifestyle change that can be achieved only through the development and implementation of targeted educational interventions and an emphasis on matters that are required for inducing positive attitudes, creating motivation, enabling decisions and ultimately performing healthy behaviors. The mean scores obtained in the present study were 31.88 ± 15.04 in the construct of perceived susceptibility, 34.76 ± 19.82 in perceived

severity, 43.11 ± 2.6 in perceived benefits of PA and 39.94 ± 1.93 in perceived barriers to PA. Perceived susceptibility to obesity prevention means that the adolescent considers him/her self prone and sensitive to this critical health issue and is more likely to adopt preventive behaviors. It should be noted that perceived susceptibility is considered an effective factor in the adoption of preventive behaviors and actual successful prevention depends on gaining real information about personal susceptibility and its associated risks. Family-oriented interventions that involve the adolescent's parents should be complemented with other effective interventions that target only the adolescents in order to achieve the desirable results. Parents should therefore be instructed on the risks of obesity and should take immediate action to prevent its development in their children.

In addition, a greater attention should be paid to perceived severity; that is, the individual's perception of the seriousness of the issue of obesity and its consequences. Adolescents should be led to understand that, without regular PA, they are more prone to obesity and its adverse complications in the future, such as the inability to perform tasks, poor body shape, losing friends, developing other diseases, depression, etc. Despite the great importance of perceived susceptibility and severity, taking specific measures to prevent obesity depends on the individual's own belief about the benefits of these health measures and their ability to help reduce the risk of diseases. Perceived susceptibility and severity cannot affect the acceptance of the proposed health measures unless their practicability and benefits are well perceived (37). Perceived benefits are personal factors that affect health behaviors and present the individual's understanding of the benefits of activities. Increased physical activity is one of the

most effective strategies for reducing the risk of certain non-communicable (chronic) diseases, such as cardiovascular diseases, obesity, diabetes mellitus, osteoporosis and some types of cancer (38). The level of PA declines dramatically in adolescence and this decline is more prevalent in girls than in boys (38). Interventions can help adolescents understand the benefits of being physical activity and thus facilitate their greater tendency toward physical activities. Moreover, if perceived barriers overcome perceived benefits, the likelihood of adherence to these behaviors will be reduced (39). The act of adherence to health behaviors is determined by the balance or imbalance of perceived positive and negative forces in the individual. In her personal evaluation, the individual presents an act by subtracting the barriers from the benefits (i.e. net benefits). People should weigh up the effects of an action against its potential negative aspects. An uninformed analysis of the benefits minus the barriers may occur when the individual assesses the effects of an action against its barriers, such as high costs, risks, undesirable, troubling and time-consuming nature and distance from the main place (40). Jacobson Vann et al. used the Health Belief Model to identify the perceived barriers to regular physical activity and found the lack of motivation, the shortage of time and the lack of social support to be the main factors at play (41).

Perceived barriers are the most important aspect in expressing or predicting health-preserving behaviors (39). There is often no desire in Iranian adolescents for increased PA and their level of activity is very low. In Iran, the level of PA and the prevalence of spinal abnormalities, which are partly due to sedentary living and the failure to strengthen the involved muscles, are higher in girls compared to boys, which further exacerbates the need for providing this group with proper facilities

for physical activities (42). The barriers to PA, especially among young girls, should be further addressed by the Iranian health authorities, since the failure to identify and resolve them will lead to an even greater reduction or a complete elimination of PA in adolescent girls. Identifying the barriers to PA will help health planners and researchers in the development of strategies for increasing activity and ultimately promoting public health.

Previous studies have shown that adolescent obesity is associated with a high risk of adult obesity, which may be partly due to the persistence of unhealthy lifestyle behaviors, such as the lack of PA, poor nutrition and exacerbated sedentary living until adulthood (43-45). A move toward changing these adjustable behaviors from childhood can have a potentially crucial role in reducing the obesity epidemic and may also entail long- and short-term health supports. Preventing obesity and promoting healthy lifestyle habits in adolescents is a top priority of the health system (46). Future studies are recommended to take full advantage of efficient health education and promotion models and theories with an emphasis on the personal, environmental and social factors that affect personal behaviors, so as to create and maintain these behaviors.

4-1. Limitations of the study

The limitations of this study include its use of self-report questionnaires, which present the disadvantage of having the respondents return inaccurate information on their forms. Current study surveyed only high-school girls students in government schools may boundary the generalizability of the results outside these contributors.

5. CONCLUSION

Data gathered from 308 adolescents of Shahr-e Kord. According to the results of this study, Mean scores of constructs of

Health Belief Model (HBM) suggest the important fact that adolescent girls have an unacceptable attitude toward this issue. Direct and significant relationships were also, observed between perceived susceptibility and the father's occupation, perceived barriers and the father's occupation, perceived benefits and the mother's age and occupation, and between knowledge and the mother's age and occupation. Therefore, physical activity promotion interferences seem essential. The health providers need to improve attitude and knowledge regarding the importance of adolescent physical activity behavior.

6- CONFLICT OF INTEREST: None.

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