Original article

Women's attitudes towards obstacles of physical activity in Sari, Iran

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(Received:7 Sep 2013; Accepted: 17 Oct 2013)

Abstract

Background and Purpose: Physical activity may be classified as intense, moderate, and low. Despite their health-related benefits, Iranian women have a low rate of physical activity. Women face numerous obstacles and challenges for participating in physical activity programs, most notably are household chores and taking caring of children, long distance between home and workplace and the other places, lack of access to appropriate facilities, lack of support by others to play their social roles. The present study aims to assess attitudes women have about the obstacles of physical activity among the female population of Sari.

Methods: In this study, 680 women referring to healthcare centers of Sari were evaluated. A 16-item questionnaire was designed to determine the personal, social and facility access obstacles. Data was codified and analyzed on SPSS software version 16. We used descriptive statistics, Pearson's correlation coefficient, and Chi-square test to summarize the data and study the relationship between the variables. P-values < 0.05 were considered significant.

Results: In this study, most women were 18-29 years old and housewives. The body mass index was 25-29 for 31.9% of the cases and 30 or higher for 32.9%. The most frequently reported obstacles for physical activity were long distance between house and the other places such as workplace and marketplace (55.6%), menses (52.1%), fatigue caused by routine activities (49%), having several responsibilities at home (45.1%), and shortage of sport facilities nearby their residency as well as shortage of an appropriate space for physical activity (38.8%). We observed significant relationships between the obstacles of physical activity and its different types.

Conclusion: Numerous obstacles prevent women from prioritizing and participating in physical activity. Interventional measures aim to improve physical activity in women that should address the obstacles.

Keywords: Physical activity, Women, Obstacles

Introduction

Physical activity refers to any movement of the body which involves contraction of skeletal muscles and increase in energy consumption(1). Urban lifestyles and modern technologies have promoted sedentary lives (2, 3). Insufficient physical activity is a major health challenge in both developed and developing countries worldwide (3, 4). Regular physical activity reduces the risk of cardiovascular disease, stroke, hypertension, diabetes, obesity, certain cancers, osteoporosis and the other chronic diseases (6). Despite the health-related benefits of physical activity, more than 3 million preventable deaths in 2009 were attributed to physical inactivity, rendering it the fourth most common cause of chronic disorders (1). Each year, approximately 2 million premature deaths worldwide may be attributed to physical inactivity (7, 8). Reports

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published by the World Health Organization (WHO) indicate that 18% of population in 51 countries of the world is physically inactive including 35% of women in south-eastern Asia (9). Nafisa (2011) reported that a large fraction of Pakistanis are not sufficiently active (10).

Sedentary lifestyle constitutes a serious public health challenge in Iran (4). Approximately 80% of the entire Iranian population is physically inactive (11). A study conducted in Tehran reported that 69.8% of the entire population was physically inactive and only 30.2% of men and 30.3% of women were involved in physical exercise (4). Women tend to be less involved in physical activity in their leisure time than men (1, 3, 7, 9, 10, 11, 13, 14, 15, 16, 17, 18). Despite all efforts made by medical community, a quarter of women never participate in any physical activity (19). In Iran, 77% of women are physically inactive (4).

Physical activity in women can be especially challenging (20); the obstacles are diverse, ranging from personal obstacles to social and environmental problems. The most significant obstacles include time shortage, lack of access to appropriate facilities (16), lack of energy, exhaustion, health problems, the cost of gym membership (21), lack of environmental resources for physical activity such as parks, lack of encouragement for using the available exercise facilities (17) as well as the challenges surrounding them in their environment (20). The other studies have mentioned motherhood responsibilities, assuming several roles, laziness, lack of motivation, obesity, shyness, and low self-confidence (22) as some of the obstacles. Many women face more than one obstacle when attempting physical activity, and many obstacles are often interrelated, for instance responsibilities and fatigue.

Developing countries have more difficulty providing exercise facilities, and thus, women in these countries are often physically inactive. Under these circumstances, the limited income earned by women tends to shift away from exercise and sport facilities. Most women prioritize their traditional roles or their occupational careers over their physical needs. Moreover, modern lifestyles have driven people towards laziness and reduced their desire for physical activity.

Previous studies indicated an inverse relationship between the obstacles of physical activity and the level of physical activity (23). Despite numerous studies dealing with physical activity in Iran, there has been no evaluation of women's attitudes towards the obstacles discouraging physical activity. Considering the vulnerability of women against obstacles of physical activity, identifying women's attitudes towards these obstacles may contribute greatly to the improvement of public health plans in this population subgroup. An efficient plan for improving women's participation should reduce the obstacles and enhance the efficacy of the interventions. Thus, the present study was conducted in order to assess the attitude of women in Sari towards the obstacles of physical activity.

Materials and Methods

This cross-sectional study started in 2011 and covered all women of 18-65 years old referring to Sari-located healthcare centers to receive healthcare services for themselves, their children or as a companion for a family member or friend. Cases were selected through stratified sampling in the following manner: Sari was divided into 4 regions, one healthcare center was randomly selected in each region, and cases were selected randomly from each healthcare

center. Pregnant women and those with a history of cardiovascular diseases, respiratory diseases, muscular-skeletal diseases, mental diseases, diabetes and hypertension which change the pattern of physical activity were excluded from the study. The sample size was estimated for 680 women based on the rates of physical activity reported in a previous Iranian study (24).

All methods and tools used in this study were approved by the Ethics Committee at Mazandaran University of Medical Sciences. All participants were invited by specifically trained personnel, and provided their informed written consent. Initially, the participants' height and weight were recorded. Body mass index (BMI) was calculated by dividing the weight (in Kg) by height squared (in m2). BMI values below 18.5 were considered low weight, 18.5-24.90 normal, 25-29.90 overweight, and 30 or more were considered obese.

We used the previous studies to identify personal, social and facilities access obstacles (20, 21, 22, 25, and 27). A 17-item questionnaire was designed in three domains of personal obstacles, social obstacles and access to facilities obstacles. In the personal obstacles domain, we inquired the participants whether they could engage in physical activity under the following circumstances: feeling tired, menses, obesity, insufficient time, low self-confidence, lack of interest in physical activity, assuming several responsibilities at home, taking caring of children and the other family members and being too lazy for physical activity. 9 items were considered for this section.

In the social obstacles domain, we asked women to express their opinion of their family members' familiarity with the culture of women's physical activity, support by friends and family members for physical activity, receiving help for housework and the other chores. 4 items were assigned for this section.

In the domain of access to facilities obstacles, we asked the participants to mention the problems related to long distance from home to workplace or the other spots, shortage of exercise facilities, shortage of space suitable for women's physical activity, high cost of gyms, gyms' limited time. 4 items were taken for this section.

The items were scored by a 5-point Likert scale from 1 (I totally disagree) to 5 (I totally agree). In order to determine the questionnaire's reliability, it was first completed by 30 women and internal consistency was evaluated using alpha-Cronbach. The correlation coefficient was obtained 0.91. After collecting data, they were codified and analyzed by SPSS software version 16. We used descriptive statistics to summarize the demographic data; in addition, we used Pearson's correlation coefficient to assess the nature and the potential of the relationship between two continuous variables, and chi-square test to study the relationship between the variables. For all of the analyses, p-values<0.05 were considered significant.

Results

Most women in the present study were 18-29 years old. The majorities of them had high school education, were married and had two children. More than half of the participants (478 women, 70.6%) were housewives.

Table 1 presents the demographic information of women participating in our study. The findings indicate that most women (587 women, 86.3%) fell in the middle socio-economic class. 217 women (31.9%) in our study had a BMI of 25-29.9, and 224 women (32.9%) had a BMI of 30 or more (M=25.9; SD=3.77).

Table 1. Demographic information of women participating in the study (N=680)

Demographic Variables		Count	Percent
Age	18-29	372	54.7
	30-39	231	34
	40-49	70	10.3
	50-59	7	1
Occupation	Housewife	478	70.6
	Clerk	132	19.5
	Teacher	9	1.3
	Private	47	6.1
	Retired	17	2.5
Marital Status	Married	560	82.4
	Single	82	12.1
	Divorced	22	3.2
	Widow	16	2.4
Education	Illiterate	6	0.9
	Elementary	45	6.6
	secondary School	140	20.6
	High School	250	36.8
	College	34	5
	Bachelor	159	23.4
	Master	43	6.3
	PhD	3	0.4
Number of Children	0	179	26.3
	1	230	33.8
	2	231	34
	3	18	2.6
	≥4	22	3.2
Economic Status	Wealthy	86	12.6
	Middle Class	587	86.3
	Poor	7	1
Body Mass Index	<18.5	29	4.3
	18-5-24.9	210	30.9
	25.29.9	217	31.9
	≥30	224	32.9

The most common physical activity reported by women was walking (574 women, 81%) six days per week (169 women, 30.6%) for half an hour per day (137 women, 24.8%). Only 126 women (18.5%) were engaged in intense sports activity, fitness program or recreational activity while 554 women (81.5%) had no intense activity. Almost one third of the participants (227 women, 33.4%) were engaged in moderate sports activity, fitness program or recreational activity, while 453 women (66.6%) did not have moderate physical activity. Time spent sitting or lying down at home, workplace or during commuting to and from a location (103 women, 15.2%) was three hours per day (M=4.61; SD=2.72).

We found a significant relationship between occupation, education and marital status and the time spent sitting or lying down at home, workplace or during commuting to and from a location (p=0.000). Moreover, we discovered a significant relationship between the participants' education and the time spent for walking to and from a location per day (p=0.000). Similarly, a significant relationship was observed between marital status and the type of physical activity (p=0.003).

Table 2 depicts the relationship between the type of physical activity and its obstacles in women participating in our study. The most frequently reported obstacles were long distance between home and the other locations, such as workplace or marketplace (378 women, 55.6%), menses (354 women, 52.1%), feeling tired due to daily activities (333 women, 49%), doing several chores at home (307 women, 45.1%), shortage of exercise facilities in the neighborhood and shortage of suitable space for women's sports (264 women, 38.8%), high cost of gym membership (230 women, 33.8%). We found a significant relationship between physical activity obstacles and its types, as presented in Table 2.

Table 2. Type of physical activity and its obstacles Relationship in women participating in our study.

Physical Activity Obstacles	Count	Percent	P-Value
Personal Obstacles			
Menses	354	52.1	0.000 → 1 0.002 → 3 0.001 → 4 0.200 → 5
Doing several household chores	307	45.1	0.000 → 1 0.001 → 2 0.002 → 3 0.200 → 4 0.000 → 5 0.000 → 6
Feeling tired due to daily activities	333	49	0.000 → 1 0.500 → 2 0.000 → 3 0.000 → 6
Caring for children and the other family members	227	33.4	0.000 → 1 0.000 → 3 0.200 → 4 0.000 → 5
Disliking physical activity	87	12.8	0.000 → 1 0.000 → 4
Laziness	169	24.9	0.000 → 1 0.000 → 5 0.000 → 6
Lack of self-confidence	164	24.1	0.000 → 1 0.000 → 6
Obesity	181	26.6	0.000 → 1 0.000 → 5
Social Obstacles			
Lack of support by family and friends	220	32.4	0.000 → 1 0.000 → 5
Not receiving help with housework and the other responsibilities	320	47.1	0.100 → 5 0.000 → 4
Using vehicles due to the long distance from home to workplace and the other locations	378	55.16	0.000 → 3
Unfamiliarity of family members with culture of women's physical activity	99	14.6	0.000 → 1
Access to facilities obstacles			
High cost of gym membership	230	33.8	0.000 → 5 0.001 → 1 0.000 → 2
Shortage of sports facilities in the neighborhood	264	38.8	0.000 → 1 0.000 → 3 0.000 → 4 0.000 → 6
Shortage of suitable space for physical activity	264	38.8	0.000 → 1 0.002 → 2 0.000 → 3 0.000 → 4
Limited time of gym use	174	25.6	0.000 → 1 0.000 → 5 0.000 → 6

Type of physical activity:

1- Time spent sitting or lying down at home or workplace

2- Job with intense physical activity

3- Job with moderate physical activity

4- Walking

5- Intense sports activity, fitness program, or recreational activity

6- Moderate sports activity, fitness program, or recreational activity.

Discussion

In the study , the reported obstacles for physical activity were long distance between house and the other spots such as workplace and marketplace (55.6%), menses (52.1%), fatigue caused by routine activities (49%), having several responsibilities at home (45.1%), and shortage of sport facilities around their residency as well as shortage of an appropriate space for physical activity (38.8%).

In terms of personal factors, widow women had less physical activity compared to those with the other marital status, which is consistent with the findings of Pan (15); it may reflect lack of support in performing the duties and responsibilities. Employed women reported higher levels of physical activity. These women tend to be more active physically as a result of occupational requirements, motherhood responsibilities and the other duties. Women with four or more children had more physical activity, which is inconsistent with the findings by Heather (2011) and Katarina (2009) indicating that women with children tend to be physically less active compared to those without children (1, 7).

More than half of the study units have BMIs of 25 or higher, which is considered as overweight and obese based on the World Health Organization standards. In the present study, we found the prevalence of overweight and obese women to be 32.97% and 31.9%, respectively. In the study by Pelts et al., (2010), 18.3% of Iranian women were reported to be obese (27). Another Iranian study reports 62.2% overweight

and 28% obesity in women (28). In the present study, about one third of women were obese, whereas in the study conducted by Nawi (2009), about one quarter of the women were reportedly obese (27), which implies a higher rate of obesity in Sari dwelling women .Despite worldwide concerns over non-contagious diseases, increasing obesity and rapid changes in work, commuting and recreational patterns, few countries report sufficient levels of physical activity (8).

The most common physical activity reported by women was walking. During a day, women find many opportunities to walk, such as walking to a location and bank, shopping, or taking children to school. They may also take up walking around the neighborhood for the purpose of being physically active. This walking compensates part of physical activity and helps overcome the challenges posed by assuming several responsibilities and household chores against moderate or intense exercise. Finding reported by Elm et al., (2011) and Velasquez (2009) support our findings, indicating that walking is the most frequent type of physical activity for women resulting from the fact that women prefer walking over driving or using other transportation vehicles (13, 29). On the other hand, our findings are inconsistent with those reported by Merom et al., (2012) and Danijl (2009) suggesting very low involvement of their study populations in walking (30, 31).

In the present study, 81% of women walked six times a day for 30 minutes, whereas Alkaabi (2009) reported that 30% of women walked three times a week for at least 30 minutes (32). Walking in appropriate locations, interesting atmosphere of the resorts, large open spaces and parks may encourage this type of physical activity (13). As walking is the most convenient, simplest and cheapest form of physical activity and requires no equipment, it is necessary to include it in routine plans of women.

In the present study, women's education indicated a significant relationship with the level and duration of walking to and from a location. Many studies have reported education as an important factor affecting physical activity (7, 15, 13, 1, 9), whereas Merom et al., (2012) found no relationship between education and level or type of physical activity (30). In studies conducted by Heather (2011) and Nawi (2009), higher education in women was found to lower their involvement in daily physical activities (7, 27). Women with higher education are better aware of the health-related benefits of physical activity, thus they adopt it as a favorable health-related behavior and try to include it in their daily plans.

In the present study, numerous obstacles affected women participating in physical activities. The most common obstacles of intense and moderate physical activity and walking included using transportation vehicles due to the long distance between home and the other locations, menses, feeling tired due to several responsibilities at home, shortage of exercise facilities in the neighborhood, lack of suitable space for women's physical activity, and high cost of gym membership. Moreover, time spent sitting or lying down at home or workplace was found to be related to more obstacles for physical activity, which matches with the previous studies' findings (25, 18, 21, 20, 22, and 26). Appropriate strategies aim to boost women's knowledge about these obstacles and motivate them to make plans to overcome these challenges that may enhance women's involvement in physical activities.

In the present study, obesity and low self-confidence were found to be obstacles for physical activity. Physical limitations of women, such as unfavorable body form, will produce a negative mental image, hindering them performing physical activity before others (29). Overweight women are less willing to engage in physical activities, such as swimming or team sports, in order not to attract the others' attention. In the present study, obesity was found to be related to the time spent sitting or lying down. Thus, body form may not only improve physically active behaviors, but may also encourage a sedentary lifestyle. In the recent years, women's physical appearance has been an object of great attention and is a common subject for discussion among them. On the other hand, modern

lifestyles, urbanization, unhealthy dietary habits and reduced physical activity are growing in developing countries, and this necessitates improved awareness regarding health-related behaviors.

Menstruation is a major challenge against daily physical activity in women. Many women regard their monthly period as some sort of illness, and reduce their activities tremendously. Our findings are in line with those of Im et al., (2011) who reported physical problems, including menses, as an obstacle hampering physical activity (29).

Feeling tired due to daily activities prevents many women from engaging in physical activity. Felipe (2007) reported "feeling tired" to be the primary obstacle for physical activity in women (23). After daily responsibilities are taking care of children and many women feeling too tired to show any interest in physical activity and tending to engage in sedentary behaviors such as sitting or lying down and watching TV. Training correct nutrition, avoiding too much work pressure, and introducing different types of physical activities that may be recreational might provide enough motivation and rest.

Assuming gender-related roles, several responsibilities at home and workplace and taking care of children and the other family members have been discovered as the important obstacles for physical activity. Taking caring of children is related to engaging in intense sports and recreational activities or fitness programs. Interference of several responsibilities, such as work, household management, motherhood duties and personal communications are the significant obstacles hindering physical activity in women (6). Performing motherhood responsibilities and caring for children reduce physical activity level. Caring for children is a critical factor inversely related to the degree of involvement in physical activity (14, 19). Caring for children and the other family members, as well as the other household commitments, are at the top of the list of priorities for women in developing countries, consuming a large fraction of their time and energy, and thus discouraging physical activity. As mothers often serve as the role models for their children, being accustomed to physical activity in mothers may have a positive effect on the pattern of physical activity in their children in future years of life and encourage a positive attitude towards physical activity. Educational programs planned for women with a busy schedule may focus on performing exercise at home between routine activities.

Social obstacles constitute an essential factor for participating in different types of physical activity. A Pakistani study by Samir (2011) reported that approximately half of the participants mentioned lack of family support as an obstacle preventing physical activity (10). Similarly, the other studies mention lack of support for social roles and not receiving help from others as the major obstacles of physical activity (17, 33). A study conducted by Shibata (2009) found a positive relationship between social support and performing physical activity at the recommended level (6).

Having a support in performing responsibilities and caring for family members creates a positive motivation for physical activity. Practical support by the other family members, especially husbands and friends, in taking care of children and other responsibilities may improve women's involvement in physical activities, particularly in the case of young mothers (14). In addition, temporary relief from responsibilities and participating in physical activities may reduce stress and improve mental health in mothers.

Another obstacle is being exposed by of family members' unfamiliarity with women's physical activity, which may be the result of cultural and normal issues in Iranian society which expect a woman to be maximally involved in family-related activities. Social norms play a key role in creating and sustaining positive motivation for physical activity in women.

Lacking a companion during daily physical activities is another obstacle indicated by our findings. Physical activity encourages interpersonal interactions and bestows a feeling of belonging. Social support, social networks and environmental factors such as encouragement and help from friends, family

members and others is highly appreciated by women and exerts a positive effect on their physical activity. Physical activity provides an opportunity for women to spend time with their family and friends to share their experiences and enjoy the activity better (17, 33, 29). By providing information about the benefits of physical activity, family members and friends will serve as a powerful and influential source to support, confirm and encourage healthy behaviors. It is thus essential to develop interventional plans to change sedentary behaviors to physically active ones and preserve and improve them. Interventional strategies such as education, problem solving and recognition of personal objectives must focus on this demographic group to improve their physical activity.

Certain obstacles of access to facilities were significantly related to physical fitness programs, moderate recreational activities and walking. Similarly, findings by Chen et al., (2011), Haughton (2006) and Velasquez (2009) indicate a positive relationship between all types of physical activity and access to facilities (13, 33 & 34). Examples of access include availability of facilities, distance from facilities, and the number and type of facilities (7, 13& 31). Appropriate and accessible facilities encourage regular exercise and provide an important incentive for preserving physical activity as a health-related behavior. Therefore, the proximity of gym to home or workplace as well as facilities for child care improve women's physical activity.

Cost of using facilities is another crucial factor. Studies by Nafisa (2011) and Felipe (2007) demonstrate that high cost of facilities and financial problems hamper physical activity (10, 23). People do not use expensive and inappropriate exercise equipment and heavy gym membership fees discourage women from attending there. As the majority of women in this study belonged to middle class, most families tended to assign their income to household expenditures rather than sport facilities. Thus, it seems necessary to develop interventional plans to encourage women's membership in sport centers free of charge or with minimal costs. In workplace, employers may pay for sport facilities and assign part of their work time to physical activity.

The weakness of the preset study is the fact that it is limited to Sari, a city with demographic characteristics of an average town, and thus the results may not be applied to the entire Iranian society, especially metropolitan areas and rural communities.

Conclusion

Numerous obstacles were reported in the present study. It is well established that raising awareness can modify the attitude. Strategies aiming to improve women's engagement in physical activity will be more efficient if they identify and target these obstacles. Sufficient support and interventions by health policy makers, relevant organizations and healthcare personnel may improve and sustain women's physical activity. It is recommended that personal obstacles preventing physical activity be addressed in visits by healthcare personnel, and resolved through enhancing self-confidence and problem-solving and time management skills.

Conflict of interests

The authors declare that they have no competing interests.

Author's contributions

F.Salmeh did the study conception and design, statistical expertise, analysis and interpretation of data and supervision; M.Yaghobian did manuscript preparation, data collection and administrative support.

Acknowledgement

The present study was conducted under sponsorship of the Research Center at Mazandaran University of Medical Sciences (Grant No:89-58), and we wish to hereby express our gratitude to the personnel of that center. We thank the women for their assistance in the conduct of this study.

References

1. Sjögren K, Hansson EE, Stjernberg L. Parenthood & Factors Influencing Outdoor Recreational Physical Activity from a Gender Perspective, BMC Public Health 2011; 11(1): 1-9.
2. Yingsong L, Takashi K, Takafumi A, Yoshio I, Toshiki O, Masaharu S, et al. A Study on How a 6-month Aerobic Exercise Program Can Modify Coronary Risk Factors Influencing their Severity in Middle-aged Sedentary Women. Environ Health Prev Med. 1999; 4(3): 117–121.
3. WHO.Physical Inactivity, A Global Public Health Problem, Sedentary Life Style 2012:1-2. http://www.who.int/dietphysicalactivity/factsheet_inactivity/en/
4. Momenan AA, Delshad M, Mirmiran P, Ghanbarian A, Azizi F. Leisure Time Physical Activity and Its Determinants among Adults in Tehran: Tehran lipid and glucose study. IJPM 2011; 2(4): 243–251.
5. Didarloo A, Shojaeizadeh D, Eftekhar Ardebili H, Niknami SH, Hajizadeh E, Alizadeh M, et al. Factors Influencing Physical Activity Behavior Among Iranian Women with Diabetes Type 2 Using Extended Theory. Diabetes Metab J 2011; 35(5): 513–522.
6. Shibata Ai, Oka K, Harada K, Nakamura Y, Muraoka I. Psychological, Social, and Environmental Factors to Perform physical Activity Recommendations among Japanese Adults. Int J Behav Nutr Phys Act 2009; 6:60.
7. Brown H, Robertsb J. Exercising Choice: The Economic Determinants of Physical Activity Behavior of an Employed Population. Soc Sci Med 2011; 73(3): 383–390.
8. Velasquez KS, Holahan CK, You X. Relationship of perceived environmental characteristics to leisure-time physical activity and meet¬ing recommendations for physical activity in Texas. Prev Chronic Dis 2009; 6(1): A24.
9. Ng N, Hakimi M, Van Minh H, Juveker S, Razzaque A, Ashraf A, et al. The Prevalence of physical inactivity in 9 Rural IN depth health demographic surveillance systems in five Asian countries. Glob Health Action 2000; 2.
10. Samir Nafisa, Mahmud Sadia and Khuwaja Ali Khan. Prevalence of Physical Inactivity and Barriers to Physical Activity among Obese Attendants at a Community Health-Care Center in Karachi, Pakistan. BMC Res Notes 2011; 4(1): 174.
11. Pirasteh A, Hidarnia A, Asghari A, Faghihzadeh S, Ghofranipour F, et al. Development and Validation of Psychosocial Determinants Measures of Physical Activity among Iranian Adolescent Girls. BMC public health 2008; 8(1): 150.
12. Giardina E.G, Laudano M, Hurstak E, Saroff A, Fleck G, Sciacca R, et al. Physical Activity Participation among Caribbean Hispanic Women living in New York: Relation to Education. Income and Age of women 's Health 2009; 18 (2): 187-193.
13. Bauman A, Bull F, Chey T, Craig CL, Ainsworth BE, Sallis JF, et al. The International Prevalence Study on Physical Activity: results from 20 countries. Int J Behav Nutr Phys Act 2009; 6: 21.
14. Ansari Walid El, Geoff Lovell. Barriers to Exercise in Younger and Older Non-Exercising Adult Women: A Cross-Sectional Study in London, United Kingdom. Int J Environ Res Public Health 2009; 6(4): 1443-1455.
15. Pan SY, Cameron Ch, Des Meules M, Morrison H, Craig CL, Xiao HJ. Individual, Social, Environmental, and Physical AND Environmental Correlations with Physical Activity among Canadians: a Cross-Sectional Study. BMC Public Health 2009; 9(1): 21.
16. U.S Department of Health and Human Service. Healthy people 2010. Improve Health, Fitness and Quality of life through Daily Physical Activity, Understanding and Improving Health (2nd ed), Washington DC,US,Govrnment printing office 2000: 22-26
17. Fleury J, Lee Sarah M. The Social Ecological Model and Physical Activity in African American women. Am J Community Psychol 2006; 37(1-2): 129-140.
18. Welch N, Mcnaughton SA, Hunter W, Hume C, Crawford D. Is the Perception of Time Pressure a Barrier to Healthy Eating and Physical Activity among Women. Public health Nutr 2009; 12(7): 888-95
19. Adachi-Mejia A, Drake K, Mackenzie T, Titus-Ernstoff L, Longacre M, Hendricks K, et al. Perceived Intrinsic Barriers to Physical Activity among Rural Mothers, Journal of Women's Health. 2010; 19 (12): 2197-202.
20. Kirchhoff A, Elliott l, Schlichting JA, Chin M. Strategies for Physical Activity Maintenance in African American women. Am J health behave 2008; 32(5): 517-524.

21. Kowal J, Fortier M. Physical Activity Behavior Change in Middle- aged and Older women: the Role of Barriers and Environmental Characteristics. Behave Med 2007; 30(3): 233-42.
22. Jewson E, Spittle M, Casey M. A Preliminary Analysis of Barriers, Intentions, and Attitudes towards Moderate Physical Activity in Women who are Overweight. Sci Med Sport 2008; 11(6): 558-561.
23. Reichert Felipe F, Barros. Aluísio J.D, Domingues Marlos R, Hallal Pedro C. The Role of Perceived Personal Barriers to Engagement in Leisure-Time Physical Activity. Am J Public Health 2007; 97(3): 515–519.
24. Motefaker M. Epidemiology of Physical Activity level in Urban Population of Yazd Province of university of Tehran Journal 2007; 65(4) : 77-81(persian).
25. Bautista L, Reininger B, Gay JL, Barroso C, Mc Cormick JB, et al. Perceived Barriers to Exercise in Hispanic Adults by Activity Level. Phys Act health 2011; 8(7): 916-925.
26. Evenson K, Aytur Semra A, Borodulin K. Physical activity beliefs, barriers,& enablers among postpartum women. Women 's Health 2009; 18(12) : 1925-1934.
27. Ng N, Hakimi M, Van Minh H, Juvekar S, Razzaque A, Ashraf A, et al. Prevalence of physical inactivity in nine rural indepth health and demographic surveillance systems in five asian countries. Glob Health Action 2009; 2: 44-53.
28. Peltz G, Aguirre MT, Sanderson M, Fadden MK. The Role of Fat Mass Index in Determining Obesity, Am j Hum Biol 2010; 22(5): 639-647.
29. Baharami H, Sadatsafavi M, Pourshams A, Kamangar F, Nouraei M, Semnani Sh, et al. Obesity and Hypertension in an Iranian Study Cohort ,Iranian Women Experience Higher Rates of Obesity and Hypertension than American Women. BMC public health 2006; 6(1): 158.
30. Im E.O, Lee B, Chee W, Stuifbergen A. Attitudes toward Physical Activity of White Midlife Women. JOGNN 2011; 40(3): 312–321.
31. Merom D, Sinnreich R, Aboudi V, Kark JD, Nassar H. Lifestyle Physical Activity among Urban Palestinians and Israelis: a Cross-Sectional Comparison in the Palestinian –Israeli Jerusalem Risk Factor Study. BMC public health 2012; 12(1): 90.
32. Danijl J, pedisisc Z, Andrijasric M. Phsisical Activity Creation Population: Cross- Sectional Study using International Physical Activity Questionnaire. Public Health 2009; 50(2): 165-173.
33. Al-Kaabi J, Al-Maskari F, Afandi B, Parkar H, Nagelkerke N. Physical Activity and Reported Barrier for Activity Among Type 2 Diabetic Patients in the United Arab Emirates. Rev Diabet Stud 2009; 6(4): 271-278.
34. Chen Yi-Ju, Huang Ying-Hsiang, Lu Feng-Hwa, Wu Jin-Shang, Lin Linda L, Chang Chih-Jen and Yang Yi-Ching. The Correlations of Leisure Time Physical Activity among an Adults Population from Southern Taiwan. BMC Public Health 2011; 11(1) :427.
35. Haughton L, McNeill LH, Wyrwich KW, Brownson RC, Clark EM, Kreuter MW. Individual, Social Environmental and Physical Environmental Influences on Physical Activity among Black and White Adults: a Structural Equation Analysis. Ann Behar Med 2006; 31(1): 36-44.