

Factors Affecting Physical Activity Participation of the Turkish Individuals Living in the United States

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ABSTRACT

The aim of the study was to evaluate the factors affecting physical activity participation of the Turkish people living in the United States (US) since sociocultural adaptation processes might affect behavior towards physical activities. 514 Turkish people (307 women, 207 men) living in the US participated in the research on average aged 36,72. The data were collected with a 31-item research scale developed from Kaiser-Meyer-Olkin parameter and Bartlett Sphericity test, and analyzed with Explanatory Factor Analysis (EFA) test and Cronbach's Alpha. Comparing the data sets, consisting of two-group variables, independent sample t-test was used whereas for the data sets, consisting of more than two group variables, a one-way ANOVA was used. According to BMI values, a significant difference [$F(3,513)=3,581, p<.05$] was found in terms of individual factors in physical activity participation. Overall it was found that the Turkish people living in the US have a high motivation to participate in physical activity. However, women compared to men, married individuals compared to singles, and obese individuals compared to average weighted individuals were found to encounter more obstacles participating in physical activities.

KEYWORDS

the United States, BMI, physical activity, obesity, Turkish people

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Introduction

Considering the barriers, challenges, and enablers of physical activity for people who have recently migrated to Western society, studies often make recommendations and propose strategies to positively affect physical activity participation in these populations. Eyster et al. (2002) shows that the terms of physical activity participation affects immigrants due to their cultural and linguistic differences. Similarly, Caporichione, Kolt, & Mummery (2009) reported that the cultural diversity process was an important component of immigrant health that was evaluated in relation to the change of diet and the acceptance of

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harmful behaviors for health such as smoking. Immigrants, especially with cultural and linguistic diversity, face increasing health risks, such as psychological health deterioration and participation restrictions on physical activity (Te'a O'Driscoll et al., 2014). These effects are seen in refugees, immigrants and international students (Sam, 2006).

Culture concerns how people live their lives and also includes aspects related to language and religion. Following this, although people seem to use their leisure time in similar ways in today's world (Roberts, 2011), differences based on culture may occur in perceptions, preferences, perspectives and perceived constraints. Culture provided a foundation for exploring perceptions about leisure preferences and leisure constraints as learned behaviour. Therefore, as Aslan (2009) points out, leisure may be perceived differently within cultures because of social norms and cognitive learned perceptions of time and work.

However, the personal nature of these perceptions can lead to an interplay between culture and these concepts. Walker, Deng, and Dieser (2005) described the value of using the social psychological concept of self-construal as a means to explore independent and interdependent cultures akin to individualism and collectivism, respectively. Similarly, Walker et al. (2007) described how interpersonal and structural constraints can vary between and within cultures, and Alexandris and Carroll (1997) lamented the limited research about constraints in non-English-speaking populations. Much of the North American research on leisure including the research on constraints has focused on individualism over collectivism, which may have rendered a narrow international perspective (Shaw & Henderson, 2005).

This research aims to determine the factors affecting the physical activity participation of Turkish people born in the US or emigrated, whether permanently or temporarily, from Turkey to the US because of the reasons including education, marriage union, work or benefitting their socio-economic conditions. Further, these concepts are defined within the terms of individual, physical and physiological, plant, budget, as well as internal and external sub-dimensions. Guiding this inquiry, are the following research questions:

- 1) What are your motives for participating in physical activity?
- 2) What are the reasons that keep you from participating in physical activity?

Factors motivating and preventing participation in physical activity will be assessed according to gender, BMI, marital status, educational status, and living zones.

Literature Review

Obesity is a massive health issue within Turkey and the US. The Organization for Economic Co-operation and Development (OECD) predicts that in 2020, two out of every three people will be obese (2012). In the US, the prevalence of overweightness and obesity (BMI > 25) was reported as 68 percent (Ogden, 2014), while in Turkey this rate was reported as 64.9 percent (TBSA, 2010). Similarly, with regard to the order of obesity prevalence among the OECD member countries, the US is ranked first with 28.7 percent while Turkey is ranked

third with 19.9 percent (OECD, 2015). Thus, in both countries, numerous studies have looked into why these rates are so prevalent.

Many studies have rooted this issue of obesity in society. Social and cultural mechanisms influence people's energy intake and energy expenditure (Sobal, 2001). For this reason, it is important in terms of public health studies to understand the societies' cultural perceptions on ideal body weight, obesity and physical activity. In this regard, after leaving home country, the settlement of a person in another country where the western culture is dominated and the changes in his/her life experiences, which can, in turn, lead to changes in his/her health (Te'a O'Driscoll et al., 2014). Thus, immigration and Western culture are seen as risk factors in gaining excessive weight and obesity (Dijkshoorna, Nierkensb & Nicolaoub, 2008).

However, moving to Western countries appears to be especially problematic for the health of non-Western immigrants. It was found that people migrating from non-Western countries to Western countries were healthy when they had come to these countries, but lost their health over time due to the influence of the cultures they were exposed to (Perez, 2002; Carvajal et al., 2002; Tremblay et al., 2006). Further, studies linking the cause of the increase in diabetic rates of the immigrants living in US and UK to the decrease in the level of physical activity (Nakanishi et al., 2004; Lawton et al., 2006). Thus, it becomes clear that the psychological, physical, cultural and social structures of people from different cultures restrict health care workers in protecting health (Lawton et al., 2006; Becker, Gilman & Burwell, 2005; O'Dea, 2008). Other studies on immigrants reporting the deterioration of their health status especially in international students while living in a different environment (Lassetter & Callister, 2009; Hirooka, Takedai & D'Amico, 2014). This deterioration in health status was associated with physical inactivity and changing lifestyle.

This increased prevalence of overweightness and obesity among immigrant groups can be a consequence of the acculturation they encounter, due to the cultural changes that they were exposed in the country where they came to as immigrants (Sundquist & Winkleby, 2000). In essence, this concept says that to adapt as immigrants to the life of another country, individuals have to balance their practices with the practices of new culture that they have in place. This culturalization process is a complex situation involving the changes in language, food consumption habits, and cultural values (Schwartz et al., 2010). For example, Jaconelli et al. (2013) shows that individual differences, such as personality, affect cultural change in the social and cultural environment. Increase in food consumption, decrease in physical activity, and changes in lifestyle transfer the increase in Body Mass Index (BMI) from generation to generation (Liu et al., 2012). So, while regular participation in physical activity is essential for health promotion, little information is known about how cultural interaction affects participation in sports and physical activity and what are its implications for health (Troost et al., 2002). For this reason, it is important to understand the effects of cultural transformation of the physical activity participation over immigrants.

Material and Methods

Participants

The participants (randomly) of study consist Turkish individuals living in the US and who were born or immigrated there. Overall, the sample size for this study consisted of 514 individuals, consisting of 307 (59.7%) female and 207 (40.3%) male, with an average age of 36.72 years old. All regions of the US were represented with 22.4%, 26.8%, 24.1% and 26.7% of the participants living in Pacific Coast, Mid-West and South West, South East, and North East of the US, respectively. Participants in the study were from 33 provinces and District of Columbia with the largest number being from California, Indiana, New York, Texas, Illinois, Florida, Pennsylvania and New Jersey where there are dense Turkish communities.

Data Collection

The questionnaires in this frame were administered to participants online, via social media and mail groups. By the end of the 6 month-long period, determined for implementation of the data collection, 572 individuals had responded. However, only 514 of these forms were evaluated due to missing information in the remaining forms.

The number of participants in the survey was above the valid lower limit of 384, which is calculated according to the sample size determination methods used for quantitative studies (Krejcie & Morgan, 1970: 608).

Data Collection Tool

In the study, the researcher used personal information form consisting of 19 questions and 31-question-scale questioning the factors affecting physical activity participation of the US-residing Turkish people. These personal information form and scale were created specifically for this study. It takes about 6 minutes to complete the data collection tool. In addition, Body Mass Index (BMI) was calculated based on the participant's own declarations of height (m) and body weight (kg). Accordingly those with BMI <18.50 were categorized as thin. Those who have a BMI between 18.50 and 24.99 were counted as normal weighted, while those who have a BMI between 25.0 and 29.9 were counted as overweight. Finally those with a BMI \geq 30.0 were classified as obese (Flegal et al., 2012).

Development of Data Collection Tool

In the stage of scale development, primarily the literature was examined and a general framework was drawn to assess the factors that constraints and motivate physical activity participation of the Turkish people living in the US.

Accordingly, an attempt has been made to search for answers to the question of "What are the reasons that encourage and impede physical activity participation of the Turkish people living in America?"

For this purpose, before setting up a pool of questions for the scale, 46 people living in America for different periods were asked to give open-ended answers for the questions including "What are your motives for participating in physical activity" and "What are the reasons that keep you from participating in physical activity?"

In addition to the information obtained from the field literature, the researcher performed content analysis on the data obtained online, and then scale items pool were formed.

The opinions of the two expert researchers as the field experts were consulted in the determination of the status of the items whether they are suitable for the research purpose and also whether they are proper to represent the area to be measured. Those experts re-examined the items; and then evaluated in terms of language and content. As a result of the evaluations made, a five point Likert-type scale consisting of 36 items.

Validity and Reliability Study of the Factors Affecting Physical Activity Participation Scale

Within the scope of the evaluation study for validity and reliability of the scale and development of the data collection tool, Kaiser-Meyer-Oikin (KMO) coefficient and Barlett Sphericity test, Explanatory Factor Analysis (AFA), and Cronbach's Alpha coefficient were used in the study.

Since the KMO value is .844, it can be said that the data structure is sufficient for factor analysis. When the Barlett Sphericity test results were examined, the calculated χ^2 value was found to be 3230,584 ($p < .01$). This result indicates that the data come from a multivariate normal distribution and are suitable for factor analysis (Cokluk, Sekercioglu & Buyukozturk 2010). As a method of dimensioning the data collection tool in the study, varimax rotation technique was used to determine basic variables in terms of analysis of basic components and clarity (Bryman & Cramer, 1999). The factor load value lower cut-off point was determined as 0.40 for each item in the study.

According to this, as a result of removing 5 items, that overlap with other factors, from the scale, only 31 items were included in the data collection tool. Those excluded items are as follows: "My social environment participating in physical activity encourages me to participate as well", "I think I will fall into a ridiculous situation during physical activity", "The fact that I do not have a friend who will do physical activity together / my friends are not interested in physical activity inhibits me", "I do not participate in physical activity due to religious reasons", "The fact that I do not use English effectively affects my participation in physical activity adversely". In the study, by examining Scree Plot graph, it was decided that data collection tool should be composed of 5 dimensions.

The reliability coefficient takes a value between 0 and 1, and as this value approaches to 1, the reliability coefficient increases. The Cronbach's alpha results for the data collection tool shown in Table 1 exhibits that the overall scale and all sub-dimensions of the scale are above the internal consistency coefficient of .70. This coefficient is among the values considered as to be reliable in the literature.

Table 1: Internal Consistency Coefficients Related to the Scale.

Dimensions	Cronbach's Alpha (Cr μ)
Internal consistency coefficient for the whole scale	.810
Motivating Factors	.894
Individual Barriers	.851
Physical and Physiological Barriers	.772
External Barriers	.721
Facility and Budget Barriers	.770

As a result, it was decided that, within the framework of the reliability and validity analyzes performed, the measurements used to obtain data on the research model are strongly reliable and provide a discriminative validity.

Statistical Analysis

In the study, frequency, percentage distributions, arithmetic mean and standard deviation values were calculated to define participants' personal characteristics and attitudes towards physical activity. In the comparison of the data according to the personal characteristics of the participants, the independent samples t-test was used for the variables consisting of two groups and the one-way variance analysis (One Way ANOVA) was used for the variables consisting of more than two groups. In the case where there is a difference between the groups as a result of the variance analysis, LSD test was used for the binary comparison between the group averages. Statistical analyzes of the data were performed by using IBM SPSS statistic program version 20.0. The level of significance in the study was taken as $p < .05$.

Results

37.9% of 514 Turkish people (Mage = 36.72; Female = 307; Male = 207) living in US participating in the survey were single, while 62.1% were married; and 15.8% of them have high school degree, 41.22% have university degree and 43.0% have post-graduate (Master of science & PhD) degree. According to BMI evaluation of the Turkish people participating in the research, it was detected that 2.5% of them were thin, 58.9% were normal, 30.7% were overweight and 7.8% were obese. Factors motivating and inhibiting individuals' participation in physical activity were assessed by age, gender, and BMI, and the relevant results are given below.

Table 2: Average and Standard Deviation Values of The Factors Affecting Participants' Participation in Physical Activity.

Factors	Item No	Items	X	SE	Order of importance
Motivating Factors	1	Physical activity positively affects my mental health	4.4047	.70894	4
	2	Physical activity allows me to protect my body health	4.4747	.66983	2
	3	Physical activity contributes to my daily life order	4.2743	.82873	7
	4	I feel happy after participating in physical activity	4.5409	.67486	1
	5	Participation in physical activity reduces my stress	4.3949	.78339	5
	6	Participation in physical activity provides me a healthy and balanced diet	4.0817	.90544	11
	7	Doing physical activity increases my self-confidence	4.1887	.89038	9
	8	I feel my muscles strengthen and develop	4.2821	.79238	6
	9	It's fun for me to participate in physical activity	4.1128	.89992	10
	10	Physical activity allows me to get rid of my excess weight	4.0214	.96807	12

	11	I feel physically fit after I participate in physical activity	4.4261	.84199	3
	12	Doing physical activity allows me to have a beautiful body appearance	4.2335	.81886	8
	13	Physical activity provides me socialization	3.5642	1.08182	13
		General Average	4.2308	.57283	
Individual Barriers	14	I think that I do not have a cultural background related to do regular physical activity	2.4105	1.41861	3
	15	I do not have enough knowledge of physical activity	2.0409	1.10655	5
	16	I do not know where and how to learn physical activity	1.7354	.89401	6
	17	I'm too busy for doing physical activity	2.8969	1.39586	1
	18	I do not want to do any physical activity because I cannot get efficiency (result) in a short time	2.2179	1.20719	4
	19	I think it's hard to make physical activity a regular habit	2.8891	1.40916	2
	20	I do not like to participate/am not interested in participating in physical activity	1.6537	.93904	7
		General Average	2.2635	.89443	
Physical and Physiological Barriers	21	I am concerned about injuries during physical activity	1.9805	.98903	2
	22	I have negative experience with physical activity in the past	1.6518	.88375	5
	23	My health problems prevent me from doing physical activity	1.7237	.96808	3
	24	I do not think I have the ability to deal with physical activity	1.7315	.92501	4
	25	I feel uncomfortable with the physical exhaustion of physical activity	2.1459	1.09229	1
		General Average	1.8467	.67342	
Facility and Budget	26	I do not like physical activity facilities nearby.	1.7335	.93083	2
	27	I do not think there is a facility to participate in physical activity in the immediate vicinity / environment	1.6576	.90239	3
	28	I find physical activity facilities expensive and do not want to make a budget for it	1.9475	1.01219	1
		General Average	1.7795	.76827	
External Barriers	29	There is no time for physical activity due to my busy school or business schedule	3.5214	1.29647	1
	30	Seasonal conditions (very hot or very cold temperature) prevents me from participating in physical activity	3.4942	1.25538	2
	31	I cannot take time for physical activity due to my family order and child (children)	2.8521	1.30583	3
		General Average	3.2892	1.01313	

Note.

SE: Standard error

When Table 2 is examined, it is observed that in the dimension of motivating factors, the participants indicated highest agreement with the item of "I feel happy after participating in physical activity" ($X = 4.540 \pm 0.674$), while they indicated lowest agreement with the item of "Physical activity enables me to socialize" ($X = 3.564 \pm 1.081$).

In the dimension of individual barriers, the participants indicated highest agreement with the item of "I'm too lazy to do physical activity" ($X = 2.8969 \pm 1.39586$), while they indicated lowest agreement with the item of "I am not interested / do not like to participate in physical activity" ($X = 1.653 \pm 0.939$).

In the dimension of physical and physiological barriers, the participants indicated highest agreement with the item of "I feel uneasy about the tired feeling of physical activity" ($X = 2.145 \pm 1.092$), while they indicated lowest agreement with the item of "I have negative experience with physical activity in the past" ($X = 1.651 \pm 0.88375$).

In the dimension of facility and budget barriers, the participants indicated highest agreement with the item of "I find physical activity possibilities expensive and do not want to allocate a budget for it" ($X = 1.947 \pm 1.012$), while they indicated lowest agreement with the item of "I do not think there is a facility to participate in physical activity in the immediate vicinity" ($X = 1.657 \pm 0.902$).

In the dimension of external barriers, the participants indicated highest agreement with the item of "There is no time for physical activity due to my intense school or work tempo" ($X = 3.521 \pm 1.296$), while they indicated lowest agreement with the item of "I cannot take time for physical activity due to my family order and children" ($X = 2.852 \pm 1.305$).

Table 3: Comparison of the Factors Affecting Participants' Participation in Physical Activity by Gender.

Dimensions	Gender	N	\bar{X}	SE	t	P*
Motivating Factors	Male	207	4.20	.62	-.906	.366
	Female	307	4.24	.53		
Individual Barriers	Male	207	2.08	.88	-3.839	.000***
	Female	307	2.38	.88		
Physical and Physiological Barriers	Male	207	2.99	.37	-4.354	.000**
	Female	307	3.12	.32		
Facility and Budget Barriers	Male	207	1.69	.72	-2.117	.035*
	Female	307	1.83	.79		
External Barriers	Male	207	3.05	1.05	-4.322	.000***
	Female	307	3.44	.95		
Total	Male	207	2.99	.37	-4.354	.000***
	Female	307	3.12	.32		

Note.

SE: Standard error

*** $p < .001$ ** $p < .01$ * $p < .05$

According to the gender of participants, it was observed that there was a significant difference in the dimensions of individual barriers [$t(512) = -3.839$, $p < 0.001$], physical / physiological barriers [$t(512) = -4.354$, $p < .001$], facility and budget barriers [$t(512) = -2.117$, $p < .05$], external barriers [$t(512) = -4.322$, $p < .001$], and also in overall scale [$t(512) = -4.354$, $p < .001$] as seen in (Table 3). When the arithmetic average values according to the groups are examined, it has been found that physical participation of women in the dimensions of individual, physical / physiological, facility / budget, external barriers is more obstructed than men. In the dimension of motivating factors, no significant difference was found between men and women ($p > 0.05$).

Table 4: Comparison of the Factors Affecting Participants' Participation in Physical Activity by Marital Status.

Dimensions	Marital status	n	\bar{X}	SE	t	P*
Motivating Factors	Single	195	4.20	.61	-.879	.380
	Married	319	4.24	.54		
Individual Barriers	Single	195	2.30	.95	.731	.465
	Married	319	2.24	.85		
Physical and Physiological Barriers	Single	195	3.05	.37	-.714	.475
	Married	319	3.08	.33		
Facility and Budget Barriers	Single	195	1.77	.77	.000	1.000
	Married	319	1.77	.76		
External Barriers	Single	195	3.11	.98	-3.113	.002**
	Married	319	3.39	1.01		
Total	Single	195	3.05	.37	-.714	.475
	Married	319	3.08	.33		

Note.

SE: Standard error

**p < .01 It was found that there was a significant difference in external barriers dimension [t (512) = -3.113, p < .01] according to marital status of the participants (Table 4). When the arithmetic average values according to the groups are examined, it has been determined that the participation of the married individuals in physical activity in the dimensions of external barriers is more obstructed than of the singles. No significant differences were found between the married ones and the singles in the other sub-dimensions and overall scale (p > .05).

Table 5: Comparison of the Factors Affecting Participants' Participation in Physical Activity by BMI Values.

Dimensions	BMI	n	Sd	\bar{X}	ss	F	P*
Motivating Factors	Thin	13	3 513	4.02	.86	1.590	.191
	Normal	303		4.23	.54		
	Over-weight	158		4.26	.53		
	Obese	40		4.08	.77		
Individual Barriers	Thin	13		2.62	.72	3.581	.014*
	Normal	303		2.22	.87		
	Over-weight	158		2.21	.88		
	Obese	40		2.64	1.02		
Physical and Physiologic al Barriers	Thin	13		3.08	.42	1.949	.121
	Normal	303		3.04	.32		
	Over-weight	158		3.09	.37		
	Obese	40		3.18	.45		
Facility and Budget Barriers	Thin	13		1.74	.86	1.111	.344
	Normal	303		1.73	.73		
	Over-weight	158		1.83	.81		
	Obese	40		1.91	.80		
External Barriers	Thin	13	3.07	.74	.489	.690	
	Normal	303	3.30	1.01			
	Over-weight	158	3.25	1.01			
	Obese	40	3.41	1.09			
Total	Thin	13	3.08	.42	1.949	.121	
	Normal	303	3.04	.32			

	Over-weight	158		3.09	.37		
	Obese	40		3.18	.45		

* $p < .05$

When the results of variance analysis in Table 5 are examined, according to the BMI values, it was detected that the participants showed a significant difference in their physical activity participation [$F(3, 513) = 3.581, p < .05$] at the dimension of individual barriers. According to the results of the LSD test in the individual barrier dimension, it was found that obese and overweight individuals are prevented more than normal weighted ones. There was no significant difference in participation of participants in physical activity according to BMI values in other sub-dimensions ($p > .05$).

No significant difference was found in all sub-dimensions of the overall scale ($p > .05$), according to the regions where participants live during the participation in physical activity and their educational status.

Discussion

Our results show that the participating Turkish people living in the United States have a high level of motivation factors to participate in physical activity; and women, married people, as well as obese individuals encounter more barriers in physical activity participation. The vast majority of participants declared that they feel happy after participating in physical activity. Nevertheless, they stated that the greatest individual barrier for becoming active is laziness and that they dislike the feeling of physiological fatigue. The vast majority of participants found that the physical activity opportunities are expensive. So they do not want to allocate a budget for those type of exercises, and that they do not have time for physical activity due to intensive school or work regimines.

Studies conducted in the United States show that there is a relationship between culturalization and body mass index (BMI), and that this relationship is ethnic and gender dependent (Goel et al., 2004). Recent studies show that 80% of Mexican adults living in the United States are overweight or obese, compared with approximately 69% of the overweight and obese of the general US population (Flegal et al., 2012). Obesity rate of 7.8% or overweightness and obesity (together) rate of 38.5% among the Turkish people living in the United States obtained during the study show that Turkish people living in the US may also be at risk of hazardous health conditions.

In our study, 84.2% of the participants have university and post-graduate degrees. In the case of Turkish people living in the US, the high level of education may be a contributing factor in raising awareness about obesity. It is known that there is an inversely proportional relationship between education level and obesity prevalence (Dijkshoorna et al., 2008). In a study conducted about immigrants living in the Netherlands, the prevalence of overweightness and obesity in Turkish and Moroccan immigrants were found to be higher than the other immigrants, and the low level of education in Turkish women was identified as a risk factor (Dijkshoorna et al., 2008). This also shows that being well educated is associated with higher physical activity levels (Browson et al., 2000; He, 2005).

On the other hand, 'linguistic proficiency' as a demonstration of culturalization is an inadequate measure to reflect the commitment of immigrants to values and norms within the culture of the host country (Abraído-Lanza et al., 2006). However, language proficiency appears to be strongly associated with some health-related outcomes since they are better equipped to be a part of the culture and the society, hence ending up participating in the physical activities more (Arcia et al., 2001). Participants who participated in our research stated that their English language skills were "good" and "very good" with the percentage of 78.2% and "moderate" with the percentage of 18.7%. Only a slice of 2.9% defined their English level as "poor" and "very poor". Parallel to this finding, participants stated that they did not see the use of language as a barrier to physical activity participation. In addition, the lack of a language barrier is a positive and motivating factor that strengthens the individual's access to physical activity.

Hirooka et al. (2014) found that Japanese immigrants living in the United States had lower levels of regular physical activity and exercise participation compared to Japanese living in Japan. It was found that the Chinese living in China compared to the Chinese living in America, have lower body weight, involve in more high-intensity exercises and hiking, and spend less time for sitting down (Lee et al., 1994). It was determined that 71.9% of Turkish people living in Turkey do not exercise regularly (TBSA, 2014). In our study, only 9.3% of the participants of the Turkish people living in the United States stated that they do not participate in any physical activity (TBSA, 2014). The rate of American Turkish people participating in physical activities regularly for a period changing in the range of half an hour and 6 hours per week is 75.3%. Unlike other immigrant populations in the United States, the fact that Turkish people are physically more active compared to the Turkish people living in Turkey, may be due to the fact that the level of education of Turkish people living in the United States have attained a high level education.

In addition, it has been determined that compared to women, men are more active in their leisure time, thereby making gender a major obstacle affecting physical activity participation (Miller et al., 2005; Azevedo et al., 2007; Beville et al., 2014). Women who participated in our research expressed that they encounter more barriers than men in all the sub-dimensions that prevented their participation in physical activities. Furthermore, in some societies, factors related to socio-economic, cultural and religious beliefs can be said to be an obstacle especially for women (Koca et al., 2009; Tekin, 2010). In some traditional cultures, women are expected to spend their time at home (Lawton et al., 2006; De Knop et al., 1996; Walseth & Fasting, 2003). A survey on immigrant men living in the United States found that being single, young, living in a non-crowded household, having a higher education level, and receiving a salary have a positive impact on physical activity participation. It was also found that Hispanic individuals are the least active group amongst all the immigrant population residing in the United States, and that Hispanic individuals who are not US citizens are twice as likely to be inactive as Hispanic US citizens (Ahmed et al., 2005).

In our study, the Turkish people living in the US reported that their religious beliefs are not an obstacle to their participation in physical activity. On the other hand, the fact that women face more barriers in physical activity participation than men could explain why women are less active. In the present study, it was found that single individuals are less active than married ones, and

this also complies with other research findings. Caperchione et al. (2011) have linked the decrease in the level of refugee participation in physical activity to the stress resulting from the trauma caused by beginning a new life in another country. In a study conducted on the Turkish people living in Holland, Hosper et al. found that the Turkish people who interacted more with Dutch culture participated in more physical activities in their spare time than those who were not as well intergraded (Hosper, Klazinga & Stronks, 2007). In this respect, we can say that adaptation of the immigrants to the culture of host country pave the way for removing the barriers on participating in physical activities. The fact that Korean Americans, Latin Americans, and Asian Americans living in the US are more likely to participate in physical activity due to the increase in culturalization, supports Hosper's findings on the participation in physical activities of Turkish people living in Holland (Lee, Sobal & Frongillo, 2000; Crespo et al., 2001; Everson, Sarmiento & Ayala, 2004; Kandula & Lauderdale, 2004).

Although only 13.8% of the Turkish people living in the US who participated in the present study stated that they have difficulties earning a living. They stated that they found the use of facilities being expensive at most in terms of budget barriers. Although the expenses including sports facilities entrance fees, transportation fees, the money spent on food-drinks or materials consumed at the time of the attendance are all barriers for the participation of a person in physical activity, the active presence of the Turkish people seems to have caused them to prefer to take advantage of free facilities such as parks and gardens in order to be active. While most (50.6%) of the participants of the study prefer outdoor areas (walking, running, forest, etc.) to participate in physical activity, a significant minority (35.2%) of the participants stated that they prefer to use in sport halls for exercise purposes (fitness centers, swimming pools, basketball, football fields etc.).

Many studies (Kaczynski & Henderson, 2008; Ding et al., 2011; Durand et al., 2011, McCormack & Shiell, 2011; National Research Council US, 2013) show that physical activity participation is influenced by urban planning and design such as facilities, transportation services and the architecture of the area. In the US and many other developed countries, city planners evaluate details such as building density, street connections, walking patterns of individuals in order to make roads suitable for pedestrians (Ding et al., 2011; van Dyck et al., 2010; Sundquist et al., 2011). It can be said that the Turkish people who participated in this study have better environmental conditions in terms of the having a better environment for participating in physical activity in comparison to Turkish people living in Turkey. Some studies demonstrated that Turkish people prefer more home-based leisure activities such as watching TV (Erkip, 2009; Gurbuz et al., 2010). According to Gürbüz and Hendersen (2014), the most popular constraints is structural aspects of access that include inadequate facilities, inability to get to opportunities and insufficient funds in Turkey. On the other hand Kocak (2017) demonstrated that the Turkish people who work out in the fitness centers face constraints during leisure attendance but still attend or continue using the facilities.

In a systematic review study of 44 articles on immigrants, Gerber, Dean & Pühse, (2012) found that 57% of the studies points out a high correlation between culturalization and leisure physical activity. In general, research findings show that ethnic differences prevent participation in physical activity, and that women

are more affected by these barriers, and also that socioeconomic factors, such as education and marital status are the main individual factors that prevent participation in physical activity. The results of our research on the habits the Turkish people living in the US, regarding participation in physical activity, support the findings of Gerber, Dean, & Pühse (2012).

Within the literature, studies tend to show that immigrants are less active both compared to the people living in the host country and to the people living in their home countries. It is seen that the physical activity participation of the Turkish people living in the US is pretty high, that language, religious beliefs, education and income levels are not barriers to participation in physical activity for the Turkish people living in the US compared to other immigrant groups, and that being married, being a woman, lack of time are generally seen as barriers for the participation in physical activity in a similar way to other immigrant groups as well as the Turkish people living in Turkey.

Conclusion

The present study is unique in the literature because it is the first study to examine the physical activity participation behaviors of the Turkish people living in the United States. The results revealed that the Turkish people living in the US have a high motivation to participate in physical activity, and that women compared to men, married people compared to singles and obese individuals compared to normal weighted individuals encounter more barriers in physical activity participation.

Human Subjects Statement

Marmara University Faculty of Medicine Non-Invasive Ethics Committee (reference#09.2013.0170) approved the research procedure for this study.

Disclosure statement

No potential conflict of interest was reported by the authors.

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