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Research article

PERCEIVED BARRIERS TO PHYSICAL ACTIVITY IN UNIVERSITY STUDENTS

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ABSTRACT
Many studies which were published in other countries identified certain benefits and barriers to physical activity among young people. But there is no data about the subject pertaining to Turkish adolescents. This study tries to rectify this with a study of Turkish university students. Undergraduate university students (n = 303) were recruited to the study. Current exercise habits and perceived barriers to physical activity were assessed in the sample. Using a Likert Type scale, participants responded an instrument with 12 items representing barriers to physical activity. Mean scores were computed. External barriers were more important than internal barriers. "Lack of time due to busy lesson schedule", "My parents give academic success priority over exercise." and "lack of time due to responsibilities related to the family and social environment" were most cited items for physical activity barriers. There is a need for future research, which will be carried out with larger sample groups to develop national standardized instrument. It will be helpful for accurately identify perceived barriers and then recommend changes to enhance physical activity among young people.

KEY WORDS: Perceived barriers, exercise, university students.

INTRODUCTION

Regular physical activity remains an important behaviour for promoting health, postponing or preventing prevalent musculoskeletal disorders such as mechanical low back pain, neck and shoulder pain and decreasing the risk of developing coronary heart disease, hypertension, diabetes, osteoporosis, obesity and colon cancers (Jones et al., 1998; Vuori, 1995). The period of adolescence represents the transition from childhood to adulthood and lifetime habits such as regular exercise are normally begun at this time (Andersen and Haraldsdottir, 1993; Engstrom, 1986). But unfortunately research indicated that physical activity rates decline consistently during the adolescent years (Kann et al., 2000; Trost et al., 2002). There are many factors that affect participation in physical activity. These included demographic variables, knowledge, attitudes and beliefs about physical activity (Dishman, 1994). There are two cognitive variables, which account for physical activity levels: perceived benefits and perceived barriers. Perceived benefits can positively, barriers can negatively influence the participation in activity (Buckworth and Dishman 1999). These barriers have been classified in different ways. In recent years, examination of perceived physical activity barriers was considered important to contribute to physical inactivity in samples of adolescents. Many studies which were completed in

some countries evaluated perceived benefits and barriers to physical activity among young people (Brown, 2005; Cheng et al., 2003; Grubbs and Carter, 2002; Gyurcsik et al., 2004; Kenneth et al., 1999; 2005; Winters et al., 2003). But there exists no data about the subject in Turkish adolescents. The purpose of this study was to analyze perceived barriers to physical activity in the Turkish university students.

METHODS

Subjects

The study was completed at Baskent University Faculty of Health Sciences. The Ethics Committee of the Baskent University has approved this study. We planned to recruit our faculty's students, aims and details of the study were explained to them. 303 of 352 students attending the undergraduate program of the faculty agreed to participate in this study. All of them were Caucasian. There were 222 females (%73.3) and 81 males (%26.7) in this study. Our sample included many more females than males; because most of students were female in the Faculty. They were 17 and 27 years of age (mean = 20.50). Weight and height were recorded and body mass index (BMI) was calculated as weight (kg) / height (m^2). Written informed consents were obtained from all the participants. The study was conducted between March and June 2005.

First, the exercise habits of the samples were assessed based on the international physical activity guidelines (Sallis and Patrick, 1994). Participants, who perform physical activity 3 or more sessions per week at moderate to vigorous intensity for 20 min or above, were classified as active. Remained participants were classified as inactive and perceived barriers to physical activity of them were evaluated by written questionnaire. The questionnaire consisted of 12 items. Contents of the items were partially based on those used in previous studies among young adults (Cheng et al., 2003; Kenneth et al., 1999; 2005). These items were rated on a 5-point Likert-type scale (Ware, 1993). The questionnaire was self-administered and subjects rated 12 items. Based on the questionnaire, perceived barriers of the sample were determined. The perceived barriers were divided into 2 categories: internal barriers and external barriers. The internal barriers were grouped to 3 categories: lack of energy, lack of motivation and lack of self-efficacy. Also external barriers were grouped to 3 categories: lack of resource, lack of social support and lack of time. Titles in these categories were established in the literature (Sallis and Hovell, 1990; Sallis et al., 1992; Ziebland et al. 1998). Each category consisted of two items and rates of questions were summed up to find score of the category. The sums of the categories' scores were used to calculate total internal and external barriers.

A preliminary version of the questionnaire was performed to a sample of 15 students attending the undergraduate program of other faculties and who did not participate in the main study. The purpose of this activity was to determine relevance of the items. After this preliminary study, some questions which were not understood by the students were rectified and some which appeared repetitive were deleted.

Data analysis

The data were analyzed using SPSS version 10.0. The results of the perceived barriers to the physical activity were presented using descriptive statistics. The present data is preliminary and should be used to define perceived barriers to physical activity in Turkish university students.

RESULTS

The study included 303 subjects. Because of they were classified as active, 84 students were excluded from the assessment of perceived barriers to physical activity. Among females, the rate of regular exercise habit was lower than males. Remaining inactive students completed the barrier assessment. Table1 summarized characteristics of the respondents.

Table 1. Demographic characteristics of the samples.

Male	Active (n)	45
	Inactive (n)	36
	Total (n)	81
Female	Active (n)	48
	Inactive (n)	174
	Total (n)	222
Marital status Single/ Married (n)		100/ 0
Mean age (year)		20.50 ± 1.78
Body Mass Index ($kg \cdot m^{-2}$)		21.51 ± 3.35

Perceived barriers to physical activity of the sample were seen in Table 2. There were gender differences in mean levels of perceived barriers. Male students have higher rates on all questions which significant differences exit (Table 2).

The total score of the external barriers was significantly higher than the score of the internal barriers Lack of time was the most important external barrier. Lack of energy was the most important internal barrier. 4 of 12 questions had a mean over 3.0. The highest value was observed in the question 11 which indicated lack of time due to a

Table 2. Exercise barriers items.

	All		Males		Females		
Items	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	**p**
1. I've been thinking about exercise is difficult and too tiring.	2.55	1.32	3.28	1.54	2.36	1.18	0.000*
2. I have never energy as much as to able to do exercise	3.41	1.01	3.73	0.98	3.32	1.00	0.009*
Lack of energy score	*5.95*	*1.98*	*7.00*	*2.17*	*5.68*	*1.84*	*0.000**
3. I've been thinking about other recreational activities with my friends are more entertaining than exercise.	2.83	1.20	3.20	1.21	2.73	1.18	0.023*
4. I have not been thinking about exercise has positive effects on my health.	2.29	0.88	2.68	0.84	2.19	0.86	0.000*
Lack of motivation score	*5.13*	*1.66*	*5.88*	*1.76*	*4.93*	*1.58*	*0.002**
5. I've been worried about my looks when I exercise	2.06	1.19	2.22	1.31	2.02	1.16	0.380
6. I have not been thinking about my ability to exercise.	1.62	0.91	2.02	1.13	1.52	0.81	0.002*
Lack of self-confidence score	*3.68*	*1.63*	*4.24*	*2.11*	*3.56*	*1.45*	*0.061*
Sum of perceived internal barriers score	***14.79***	***4.16***	***17.13***	***5.13***	***14.19***	***3.66***	***0.001****
7. There is no fitness center that I could get to.	2.52	1.23	2.37	0.98	2.56	1.29	0.654
8. I have no exercise equipment at home that I use.	2.52	1.23	2.37	0.98	2.56	1.29	0.654
Lack of resource score	*5.05*	*2.47*	*4.75*	*1.96*	*5.12*	*2.58*	*0.654*
9. My family or friends do not encourage me to exercise.	2.36	1.14	2.68	1.12	2.27	1.13	0.023*
10. My parents give academic success priority over exercise.	3.65	1.16	3.66	1.24	3.65	1.15	0.851
Lack of support	*6.01*	*1.67*	*6.35*	*1.70*	*5.92*	*1.66*	*0.097*
11. I have no leisure time for exercise because of my busy lesson schedule	3.76	0.92	3.84	0.79	3.74	0.95	0.658
12. I have no leisure time for exercise because of my social and family responsibilities.	3.49	0.98	3.75	0.82	3.43	1.01	0.040*
Lack of time	*7.26*	*1.69*	*7.60*	*1.30*	*7.17*	*1.77*	*0.133*
Sum of perceived external barriers score	***18.32***	***4.22***	***18.71***	***3.20***	***18.22***	***4.45***	***0.244***

* $p < 0.05$.

busy class schedule. Other important items were: "My parents give academic success priority over exercise.", "lack of time due to responsibilities related to the family and social environment" and "I have never any energy to able to do any exercise". Only one item associated to lack of self efficacy ranked below 2.0.

DISCUSSION

Regular physical activity improves psychological health and cardiorespiratory fitness (Jones et al., 1998; Sallis and Patrick, 1994; U.S. Department of Health and Human Services, 1996). It was shown how physical activity patterns are established in childhood, adolescence and young adulthood (Buckworth, 2001). One study indicated that as a developing country, cardiovascular morbidity and mortality are high in Turkey and physical inactivity is common in both genders (Onat, 2001). Ucar et al. (2000) indicated that Turkish schoolchildren who were in the 7-18 year old age group had a low level of physical activity and prevalence of physical inactivity increased in the 15-18 year old age group in both sexes. Despite of dramatic reports, to our knowledge, there is no study that assessed physical activity barriers for young adult in Turkey. We assessed perceived barriers to physical activity for

our university students in this study and we thought that this study with a relatively small sample may be a pilot for related studies in the future.

Not having enough time was the most important barrier for not participating in physical activity among our samples. The barriers to exercise reported in the student population are consistent with our findings. One study reported the greatest barrier was time constraint due to school work, social and family activities on high school students (Allison et al., 1999b). In other two studies, similarly lack of time was cited as most common barrier by students (Grubbs et al., 2002; Gyurcsik et al., 2004).

When viewed our sample's answers to instrument related to physical activity barriers, four items which have higher rates ranked as "I have no leisure time for exercise because of my busy lesson schedule", "My parents give academic success priority over exercise.", "I have no leisure time for exercise because of my social and family responsibilities." and "I have never any energy to able to do exercise." According to a new study, the most frequently cited barriers among adolescent females were listed as: "I don't have time", "I' m too tired" and "exercise doesn't interest me" (Kimm et al., 2006). Observations from our research are similar to this study. But we have also found that two other items related to lack of motivation do not have any especial significance.

In this survey, perceived external barriers seemed more important than perceived internal barriers. The items related to perceived internal barriers have low rates. Only one item which indicated lack of energy, reached a significant level. The finding is not in accordance with previous studies. Studies found that perceived internal barriers were inversely related to participation physical activity among high school students (Allison et al., 1999b). Some studies also shown that perceived internal barriers were as important as perceived external barriers in young people (Allison et al, 2005; Gyurcsik et al., 2004). Two internal barriers include lack of motivation and fatigue were widely cited barriers among sedentary teenagers and young adults (Allison, 1999a; Tape et al., 1989). Robbins' investigation which completed with 77 adolescent girls noted lack of self efficacy was prime reason for physical inactivity (Robbins et al., 2003). Lack of confidence was accepted as a barrier by male adolescents in a more recent study (Allison et al., 2005). The barrier was unimportant among our study participants. One possible reason may be related to these differences that our sample comprised university students and mean age of the subjects was the higher than the mentioned studies. Because perceived barriers to physical activities vary by age (Brown, 2005).

One report stated cultural norms and national development are closely associated to being physically active (Haase et al., 2004). Barriers to increased activity varied by social class and measures of socioeconomic status may induce different profiles of perceived barriers (Chinn et al., 1999). When we viewed our analysis from this perspective, the differences between the current study and the existing literature were not unexpected.

This study had two important properties: Our data were collected from the university students. This population was qualified as a major sector of young adults and our future social opinion leaders (Leslie et al., 1999; 2001). Despite of this fact, few studies have examined the barriers among university students (Brown, 2005; Grubbs, 2002). Our findings may shed light on the interventions to promote physical activity in university populations. The written questionnaire used in this study was brief and focused on "need to know" questions that could be answered easily. The full respondent rate was observed in the questionnaire. It helped to achieve the aim of the study, namely contributed to understanding of barriers to physical activity among the students. Thus, our trial brought out reasons related to physical inactivity in Turkish adolescents for the first time.

On the other hand, there is one limitation in our study which must be considered: our research was carried out only in our university which is a private university and located at the capital city of the Turkey. Sociocultural and economic profiles of the students participated to this study may be different from the students attended to other universities in the Turkey. In addition, participants of this research were special sample who attending to the faculty of health sciences. They may be more conscious about exercise benefits and this factor may be affected the profile of the barriers. If this study involved varied students in other undergraduate programs, faculties and universities; perhaps different internal or external perceived barriers to physical activity would be important.

CONCLUSION

Because of small sample, our results may not characterize the general Turkish university students. There is a need for future research, which will be carried out with larger sample groups to develop national standardized instrument. It will be helpful to accurately identify perceived barriers and then

recommend changes to enhance physical activity among young people.

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KEY POINTS

- The purpose of this study was to analyze perceived barriers to physical activity in the university students.
- The results showed that not having enough time was the most important barrier for not participating in physical activity among our samples.
- This study with relatively small sample must be considered as pilot study for related studies in the future.

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