

Self-efficacy, Physical Activity Enjoyment and BMI Status of Turkish University Students

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ABSTRACT This study examined the self efficacy and physical activity enjoyment, and their possible associations with body mass index (BMI) and gender between university students. The sample was comprised of 173 participants, 86 males and 87 females ranging in age from 18 to 32 years. The participants completed the Self-efficacy Scale and the Physical Activity Enjoyment Scale. Analysis of data revealed there were no significant differences in both physical activity enjoyment and self-efficacy scores for genders ($p > 0.05$), while there was a significant difference in BMI for gender ($p < 0.05$). There were no significant differences for the physical activity enjoyment ($p > 0.05$), while there were significant differences between self-efficacy ($p < 0.05$) and BMI levels according to physical activity participation ($p < 0.05$). These differences show that higher physical activity enjoyment and self-efficacy levels affect participation in physical activity and it would lead to ideal BMI levels for university students.

INTRODUCTION

Physical Activity (PA) has positive effects on physical and mental health in both clinical and nonclinical populations (Taylor et al. 1985). Promoting physical activity participation enjoyment is a key factor (Williams et al. 2006; Dacey et al. 2008). Enjoyment can be described as a positive affective state that reflects feelings such as pleasure, liking, and fun (Scanlan and Simons 1992; Wankel 1993). A number of studies have demonstrated the relationship between enjoyment and Physical Activity used single-item measures or scales that have not been adequately validated (Kendzierski and De Carlo 1991; Motl et al. 2000; Moore et al. 2009).

The researchers found that adoption of and adherence to exercise was determined by self-efficacy (Sallis, et al. 1986; Dishman 1988; Fontaine and Shaw 1995). They established that higher self-efficacy leads to greater adherence

to exercise. Higher judgments of self-efficacy may lead to increase in physical activity behavior, in part, by increasing perceived enjoyment of physical activity (Lewis et al. 2015). Garcia and King (1991) showed that the level of self-efficacy correlated with whether exercise was maintained beyond program involvement. Therefore, measures to enhance self-efficacy are likely to lead to greater exercise adherence, an essential health behavior.

Self-efficacy is an important mediator of a broad array of health behaviors (O'Leary 1985; Bandura 1986; Strecher et al. 1986; McAuley and Courneya 1992). Bandura (1989) defined self-efficacy as "beliefs in one's capabilities to mobilize the motivation, cognitive responses, and courses of action needed to meet given situation demands".

Self-efficacy has a regulatory function in different health domains, such as adherence to medical recommendations (for example, adoption of a physically active lifestyle), positive and negative affect, dealing with pain, and coping with stress (Luszczynska 2005).

Within the interactionist framework of social cognitive theory (SCT) (Bandura 1986, 2001), self-efficacy beliefs and social factors interact to influence the self-monitoring of one's behavior, its determinants, and its effects. From the

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perspective of SCT, enjoyment and social support should contribute to the self-regulation of exercise behavior (Bandura 1991).

Objectives

The purpose of the current study is to investigate self efficacy and physical activity enjoyment, and their possible associations with body mass index (BMI) and gender. Based on social cognitive theory, self-efficacy for exercise refers to an individual's personal belief about their ability to routinely engage in physical activity and about personal benefits of routine engagement in physical activity (Bandura 1997).

It was hypothesized that self efficacy and the PA enjoyment will be significantly associated with BMI and there are no gender differences between university students. Also, it was expected that increasing self-efficacy would be associated with greater enjoyment of physical activity, whereas decreasing self-efficacy would be associated with lower enjoyment of physical activity.

METHODOLOGY

Subjects

The sample comprised 173 university students from Kahramanmaraş Sutcu Imam University (Turkey), including 87 females and 86 males aged between 18 and 33 years ($M = 21.38$, $SD = 2.77$). From the entire sample, 108 participated occasionally and 65 regularly in a physical activity (swimming, hiking, running, basketball, volleyball or etc.).

Measures

The PACES was developed by Kendzierski and DeCarlo (1991) for measuring positive effects associated with involvement in physical activity among college students. The original PACES consists of 18 statements on a scale between two bipolar adjectives (for example, enjoy-hate, bored-interested) with seven response degrees.

Motl et al. (2000) revised the PACES for its use in adolescents. The revised version consists of 16 items beginning with "When I am physically active..." Motl et al. (2000) shortened the answer categories to a 5-point continuum (1

is "disagree a lot" to 5 is "agree a lot"). The scale showed acceptable internal consistency with Cronbach's alpha .87 (Moore et al. 2009). High scores on the positive items and low scores on the negative items would indicate a high enjoyment of physical activity. A total enjoyment score can also be obtained by reversing negative item scores and summing them to positive item scores. With this procedure, total enjoyment scores can range from 16 to 80 (maximum enjoyment). The current study applied university students and used the 16-item version of the PACES. For validity and reliability, the questionnaire was translated and adapted for the Turkish population using the back translation technique. Two Turkish researchers fluent in English independently translated the questionnaire from English into Turkish, and then discussed extensively their translations until they reached complete agreement on all items. The translated items were retranslated into English by a professional translator who was a native English speaker. Finally, the two researchers carefully examined the translated and retranslated items and reached consensus on Turkish translation. The Turkish version of the PACES is available with the researcher upon request. The scale showed good reliability (Cronbach's alpha .89) and good test re-test correlation ($r=0.76$).

The Self-efficacy Scale

The Self-efficacy Scale (Sherer et al. 1982) was developed to assess these general self-efficacy expectancies. The self-efficacy scale has two subscales, the General Self-efficacy Subscale and the Social Self-efficacy Subscale. Sherer et al. (1982) found that both subscales have adequate reliability (Cronbach alpha reliability coefficients = .86 and .71, respectively). Gözüm and Aksayan (1999) adapted into Turkish culture the General Self-efficacy Scale and, its Turkish form has 23-items including both the general and the social self-efficacy items. In this research, the Cronbach's alpha coefficient was .81.

Body Mass Index (BMI)

Body composition determined by measuring standing height using a portable stadiometer (Shorr Productions) and weight was measured using a digital scale (Seca 880). BMI was calculated (weight in kilograms divided by height in meters squared).

Data Analysis

The primary dependent variable, physical activity enjoyment scale and self-efficacy scale were assessed for skewness and kurtosis and found to be approximately normal for samples. An independent samples *t*-test was performed to determine according to gender and physical activity participation status (occasionally or regularly) whether differed between enjoyment scores and self-efficacy. Partial correlational analysis was used to determine the relationship between enjoyment scores and self-efficacy.

RESULTS

Table 1 shows the descriptive statistics, means and standard deviations for the physical activity enjoyment, the self-efficacy and BMI status of students. The data shown is not significantly different for physical activity enjoyment and self-efficacy scores for genders ($t = -1.07$, $df=171$, $p > 0.05$; $t = -1.1$, $df=171$, $p > 0.05$) while there was significant difference in BMI for gender ($t = 5.41$, $df=171$, $p < 0.05$).

Table 2 shows the descriptive statistics, means and standard deviations for the physical activity enjoyment, self-efficacy and BMI status of students according to physical activity participation. The data is not significantly dif-

ferent for the physical activity enjoyment ($t = -1.05$, $df=171$, $p > 0.05$) while there were significant difference in self-efficacy scores ($t = -4.08$, $df=171$, $p < 0.05$) and BMI levels according to physical activity participation status ($t = -2.99$, $df=171$, $p < 0.05$). Also, the Pearson correlation analysis showed that the physical activity enjoyment is positively and significantly related with self-efficacy ($r = .35$, $p < .01$).

DISCUSSION

The current study examined the self efficacy and physical activity enjoyment, and their possible associations with body mass index (BMI) and gender in university students. In agreement with the study's hypothesis, significant difference in self efficacy and the PA enjoyment with BMI was found while there were no significant difference between both physical activity enjoyment and self-efficacy scores for genders. Also, it was found that self-efficacy positively correlated with enjoyment of physical activity, whereas decreasing self-efficacy would be associated with lower enjoyment of physical activity.

According to physical activity participation status of university students, there were no significant differences in physical activity enjoyment while significant differences in self-efficacy scores and BMI levels were found. Also,

Table 1: Means and standard deviations for the physical activity enjoyment, the self-efficacy and BMI status of students for gender

	Gender	Mean	Std. deviation	t- test
Physical activity enjoyment	Male	82.3	15.5	$t = -1.07$, $df = 171^*$
	Female	84.8	15.2	
Self-efficacy	Male	63.2	8.1	$t = -1.1$, $df = 171^*$
	Female	61.6	9.8	
BMI	Male	22.4	2.6	$t = 5.41$, $df = 171^{**}$
	Female	20.5	1.9	

Note: $p > 0.05^*$; $p < 0.05^{**}$

Table 2: Means and standard deviations for the physical activity enjoyment, the self-efficacy and BMI status of students for physical activity participation status

	Gender	Mean	Std. deviation	t- test
Physical activity enjoyment	Occasionally	82.6	15	$t = -1.05$, $df = 171^*$
	Regularly	85.1	15.9	
Self-efficacy	Occasionally	60.3	9.7	$t = -4.08$, $df = 171^{**}$
	Regularly	65.9	6.4	
BMI	Occasionally	21.1	2.5	$t = -2.99$, $df = 171^{**}$
	Regularly	22.2	2.2	

Note: $p > 0.05^*$; $p < 0.05^{**}$

in the Pearson correlation analysis, the physical activity enjoyment is positively and significantly correlated with the self-efficacy. These results are in agreement with theory, and self-efficacy had direct effects on the enjoyment from the physical activity participation. Also, this finding is consistent with previous studies indicating that self-efficacy is an important predictor of physical activity initiation (Williams et al. 2008; Crain et al. 2010; Lewis et al. 2015).

A number of studies have demonstrated that self-efficacy is strongly associated with the amount of physical activity undertaken (Lee et al. 2008). Hu and colleagues (2007) find that in college-aged women, participants in the high-efficacy condition reported greater enjoyment of physical activity than those in the low-efficacy condition. Evidence from some trials supports the view that incorporating the theory of self-efficacy into the design of a physical activity intervention is beneficial. A recent study (McAuley et al. 2005) reported that higher self-efficacy was associated with greater positive wellbeing over the course of a 6-month randomized exercise intervention for older adults. Research findings that support the importance of individual behaviors in decreasing the risk of morbidity and mortality, suggest that efforts to increase self-efficacy may improve health behaviors (Conn 1998).

Studies have shown that both self-efficacy and enjoyment are predictive of physical activity behavior over time, typically in the context of a behavioral intervention, including studies in which self-efficacy and/or enjoyment have been shown to mediate the effects of a behavioral intervention on physical activity behavior (Williams et al. 2008; Crain et al. 2010).

Physical activity interventions aimed at improving the self-perception of exercise self-efficacy can have positive effects on confidence and the ability to initiate and maintain physical activity behavior (Lee et al. 2008). Two studies investigating the effects on leisure time physical activity found that participants who were more autonomously motivated were more likely to persist in their activities over time as opposed to those that were not autonomously motivated (Hagger et al. 2003; Wilson et al. 2003). Converse to the current study, Carraro et al. (2008) found that there are gender differences in physical activity enjoyment, and girls reporting lower enjoyment than boys, and a decrease of enjoy-

ment being found with age. Their results are consistent with the findings of previous research (Carroll and Loumidis 2001; Prochaska et al. 2003).

In the sport and physical activity (PA) field, enjoyment can be described as a positive affective response to the sport experience (Scanlan and Simons 1992). Promoting active lifestyles and regular PA among youth is considered as an important factor (Carraro et al. 2008).

In summary, these results support that factors of the enjoyment from physical activity participation and self-determination theory affect university students' physical activity participation. Enjoyment has important effects on the individuals' quality of life (Kahneman et al. 1999), and therefore, it should be viewed as a priority when the goal is to encourage healthy lifestyle habits.

CONCLUSION

There are limitations in the current study that should be noted. Participants were only recruited from one university at Turkey. While no significant differences in between students' gender and physical activity participation rates were found, it was found that physical activity enjoyment with BMI status and physical activity participation rates are positively related.

RECOMMENDATIONS

The findings of this study provide general information on Turkish university students' BMI status, physical activity enjoyment levels, self-efficacy status and its differences in gender and physical activity participation frequency in a week on BMI levels.

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