



Understanding college student's motivation for physical activity participation: The role of gender, sport type and activity level

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Abstract

The present study aimed to investigate the motivational factors which has an influence on college students' participation in recreational physical activities. In this sense, gender, sport type (team or/and individual sport) and level of physical activity (MET scores) differences within motivational dimensions were examined. In the frame of the current study, a convenience sampling strategy was utilized. 383 Middle East Technical University students ($M_{age}= 21.42$, $SD=3.30$) voluntarily participated to this study. Data were gathered with an instrument composing of three sections; a demographic information part, a self-report instrument for measuring physical activity, and Physical Activity and Leisure Motivation Scale (PALMS). Physical condition was found to be the most important participation motive, On the other hand, others expectations motive was the least important physical activity participation motive for Turkish college students. When physical activity participation motivations were compared with regard to gender, there was not any significant difference except for the appearance motivation. Females rated appearance motive lower than males for engaging in physical activity. However, significant sport type and level of physical activity differences were found. One-way MANOVA results revealed that team sport participants had significantly higher other's expectations motivation with compared to individual sport participants. With respect to activity level difference, higher physically active participants have higher motivations and there were significant differences in competition, mastery and enjoyment motivations among medium and vigorous level physical activity participants. The knowledge of the most significant motives for physical activity participation according to variations of the individuals can help practitioners to lead individuals to activities that best suit them and that best motivate them which is very important to start and continue to any physical activity.

Keywords: Physical Activity Motives; Gender; Sport Type; Activity Level; College.

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Introduction

There is an increasing evidence suggesting that regular physical activity associated with immediate and long-term benefits including improved cardiovascular and muscular fitness, lower rates of obesity, improved psychosocial health, and academic achievement (Ng, 2011). Despite these well documented physical and psychological benefits, and risks of a sedentary lifestyle, young individuals are not as physically active as they need. There is a steep decline in physical activity levels as children develop through adolescence (Cooper, Schuett, & Phillips, 2012). Physical activity rates continue to decline when adolescents move into young adulthood. Kilpatrick, Hebert and Bartholomew (2005) revealed that students' physical activity levels decrease when they move high school to college. For instance, only 38% of college students regularly participated in vigorous physical activity and only 20% participated in moderate physical activity, whereas 65% of the high school students participated in vigorous physical activity and 26% of the high school students participated in moderate physical activity. Recent physical activity participation statistics for Turkish people are even lower, 45.5% of individuals in Turkey who were aged between 20 to 24 years do not participate in any physical activity. Only 15.5% of the individuals over the age of 18 participated in physical activities to improve their health (Öcal, 2014). Turkish youths are not physically active enough to take advantage of benefits of physical activity.

More physically active young adults and adolescents are in their leisure time, the more likely they are to remain active throughout their life (Kozechian, Heidary, Saiah, & Heidary, 2012). For instance, Sparling and Snow (2002) revealed that 84.7% of the individuals who exercised regularly as college seniors were still physically active 5 or 10 years later after their graduation. Authors found the similar trend among those who were not active; 81.3% of the individuals who were physically inactive as college seniors sustained a sedentary lifestyle. Besides, Forrester, Arterburry, and Barcelona (2006) revealed that students who participate in recreation programs while in college were more likely to sustain physical activity behaviors after graduation when compared with college students who do not participate in recreation programs. Thus, studies on physical activity patterns are essential not only because they can find out those who are in need of interventions to increase physical activity levels, but also they can predict who are more likely to be physically inactive (Keating, Guan, Pintero, & Bridges, 2005). Therefore, researchers, policy makers, and health professionals have all sought to find out why some people are physically active, whereas others are not (Molanorouzi, Khoo, & Morris, 2015). Although the reasons for participation to physical activity are highly complex, one of the most significant factors that stimulate and maintain physical activity participation is motivation (Roy Chowdhury, 2012). Motivation is a psychological concept that encourage an individual toward a desired goal and is regarded a psychological force that includes the intention and direction to engage in a certain behavior (Ball, Bice, & Parry, 2014). Motives has a key role in every aspect of life, in participation to physical activity as well (Çetin, 2013). Motivation is a basic element that shapes our behaviors. Hence, understanding the basic reasons that encourage the young individuals to physical activity has been a very essential issue (Çetin, 2013). Participation motivation incorporates the processes of initiation, continuation, and withdrawal from physical activity (Weiss & Petlichkoff, 1989). For instance, youth who perceive themselves as successful at sports have higher future expectations for success in sport than those who perceive themselves as unskilled, which lead to higher motivation and continued participation (McDonough & Crocker, 2005). With regard to university sport, sport experience appears to be attractive to students for the following types of reasons: being with friends, fun, learning, improving skills, winning, health, enjoyment and success (Sindik, Mandić, Schiefler, & Kondric, 2013).

Research on participation motivation indicates that there are differences between participation motives and some variables such as gender, the preference of individual versus team sports and level of participation in physical activity (Frederick, Morrison, & Manning, 1996;

Rogers et al., 2008; Ryan et al., 1997; Weinberg et al., 2000). In a study on gender differences on college students' motivation for physical activity, men reported higher levels of motivation than female for social recognition, challenge, competition, strength and endurance females, on the other hand, rated weight management higher than men (Kilpatrick et al., 2005). Moreover, there is a relationship between physical activity types (team or individual sport) and the participation motives. For instance, Morris et al. (1995) revealed that team sport participants' placed more emphasis on affiliation, on the other hand, individual sport participants' rated interest/enjoyment and competence/mastery higher than any other group. Furthermore, it can be said that the extent to which people undertake physical activity is related to the level at which they participate (Chowdhury, 2012). However, literature is very limited about the motivations to participate in physical activity and its relationship between levels of participation. Whether low, moderate and vigorous level physical activity participants differ in their motivations is unknown for Turkish college students. In this regard, to increase college students' participation in physical activity we need to consider these factors that has an impact on their participation. Thus, this study aimed to investigate the motivational factors of college students' participation in physical activities. In this sense, gender, sport type and level of physical activity differences within motivational dimensions were examined.

Method

Sample

In the frame of the current study, data were collected through a self-administrated questionnaire during the spring semester and summer school in 2015 by convenience sampling technique. A total of 383 Middle East Technical University students voluntarily participated to this study. We considered Kline's (2005) criterion of a sample size exceeding 200 as large and sufficient for data collection. Questionnaires were distributed in classes of different academic departments. Researchers briefly explained the research purpose and willing participants filled the questionnaires. The time to explain the study purpose and complete the questionnaire was approximately 15 minutes. Among the college students, 151 (39%) of them were female and 232 (61%) of them were male students. 33% were residing at campus. 60 % of the participants were living at home outside campus and 2% dormitory outside campus. With regard to sport type, 24% of the students reported that they were engage in team sports, 32% individual sports, 13% both type of sports and 29 % reported that they weren't doing any sport. Therefore, 112 (29%) student omitted from the data in the analysis. According to physical activity levels (MET scores), most of the students (49%) were moderately active (26%) of the students were highly active and (25%) were found as low level physical activity participants.

Instruments

Data were gathered quantitatively with an instrument composing of three sections; a demographic information part and two questionnaires. The selected two questionnaires aimed to explore; (a) Physical activity levels (MET scores), and (b) Physical activity and leisure motivations of the Middle East Technical University students. Necessary permissions to administer the surveys were taken from the authors of the scales and from the METU Human Subjects Ethics Committee (HSEC). To determine the physical activity levels of participants: a self-report instrument consisting of three questions was used. It categorizes physical activities as low, moderate and vigorous by giving examples for each and asks weekly participation as hour to measure intensity and frequency of physical activity. Several examples of exercise types given under three intensity categories are; (a) low intensity exercise; light effort exercises (e.g., bowling), (b) moderate intensity exercise; not too exhausting exercises (e.g., brisk walking, dancing), (c) vigorous intensity exercise; exercises with higher heart rate (e.g., running/jogging, basketball).

Participants were classified according to their MET scores into one of three groups: low, moderate and vigorous activity participants depending on their weekly participation time and exercise intensity. Second, Physical Activity and Leisure Motivation Scale (PALMS) was utilized which is revised version of "Recreational Exercise Motivation Measure" (REMM) developed by Rogers and Morris in 2003. The REMM is a 73-item measure of motivations for recreational activities. The sizeable length of the REMM has criticized. Since, the time needed to complete the questionnaire may lead to boredom. Therefore, a shorter measure, called the Physical Activity and Leisure Motivation Scale (PALMS), was developed (Morris & Rogers, 2004). This shortened version of the scale named as Physical Activity and Leisure Motivation Scale to better reflect all types of activities including sports, exercise, physical activity and leisure time activities (Morris & Rogers, 2004). The reliability and validity evidences of this PALMS scale for Turkish subjects were obtained by Aşçı, Çetinkalp, and Altıntaş (2012). Findings on the construct validity of the scale ($\chi^2/df = 2.59$, RMSEA = .08, SRMR = 0.08, CFI = .89, NNFI = .91) were supported the eight-factor structure for 34 items (Aşçı, et al., 2012). The 34-item PALMS includes eight motives for participation in recreational sports, including; psychological condition, mastery, other's expectations, enjoyment, social affiliation, competition, appearance and physical condition. It is a 5-point Likert scale ranging from "strongly disagree" to "strongly agree".

Results

Data were analyzed by the Statistical Package for the Social Sciences, version 20. Prior to data analysis, variables of the study were checked in terms of missing values, univariate and multivariate outliers and the assumptions like normality. First of all, Cronbach alpha values were computed for the internal consistency of the subscales. As it can be seen on Table 1 below, Cronbach's alpha coefficients of PALMS subscales were ranged from 0.51 to 0.89. All reliabilities for subscales exceeded .70 except for other's expectations subscale. Thus, subscales have adequate internal consistency ($\alpha > .70$) (Nunnally, 1978), and can be used successfully to measure participants' motivations. In other's expectation subscale there were two items about earning money through sport. This may not be convenient for college students. One item was about other people's expectation. This may be the cause of inconsistency and low reliability of the other's expectation subscale. In order to get overall information about the collected data, descriptive statistics was firstly performed. In this regard, mean scores indicated that physical condition which is about maintaining physical health was the most important motivational factor affecting university students' decisions for physical activity participation ($M=4.28$, $SD=.83$). The second most important motivational factor was found to be psychological condition which is about stress reduction ($M=3.96$, $SD=.91$). Maintaining physical health and relieving stress were the highest motivations for physical activity participation among college students. Enjoyment was found to be the third most important motivating factor ($M=3.75$, $SD=.76$). On the other hand, the lowest mean score was obtained for the other's expectations subscale ($M=1.99$, $SD=.86$). The second lowest mean score was obtained for competition ($M=2.62$, $SD=1.03$) subscale of the PALMS. In this sense, the least important motivation for physical activity participation was doing because of others expectations as presented in Table 1 below.

In order to determine if there was any significant difference between male and female students in terms of their motivation for physical activity, independent samples t-test was performed. Results revealed only one significant difference in appearance motivation. Contrary to literature, females rated appearance motive significantly lower than man for engaging in physical activity.

Table 1

Descriptive Statistic of Motives with Regard to Gender

Number of items	Subscales	α	M	SD	Female	Male
4	Mastery	.72	3.70	.86	3.64	3.73
4	Physical Condition	.87	4.28	.83	4.29	4.27
5	Social Relations	.89	2.96	1.09	3.02	2.91
4	Psychological Condition	.83	3.96	.91	4.03	3.92
4	Appearance	.83	3.73	1.00	3.56	3.86
3	Other's Expectation	.51	1.99	.86	1.96	2.01
5	Enjoyment	.75	3.75	.76	3.80	3.72
5	Competition	.83	2.62	1.03	2.54	2.67

In order to examine whether difference exist between selected demographic variables (e.g. sport type, activity level) and physical activity motivations two MANOVAs were performed. Firstly, to understand if any significant difference exists between college students' preference of physical activity (team and/or individual sport) and their motivation for physical activity one-way MANOVA was conducted. Before the MANOVA results, it is important to mention about the basic assumptions of this analysis including; multivariate normality, homogeneity of population covariance/variance matrix and homogeneity of variance. For the multivariate normality, Mardia's test was conducted and the assumption was not violated ($p > .05$). One of the important assumptions of multivariate analysis is the homogeneity of covariance/variance matrix assumption, known as equal variation in each group (Field, 2009). This assumption was checked by Box's test of equality of covariance matrices. Result of this test should reveal non-significant scores so that homogeneity of variance is not violated. Homogeneity of covariance matrices assumption was not met for this study since Box's M Test was significant ($p < .05$) which was interpreted as the variances in relationship with others, were not same across the variables (Tabachnick & Fidell, 2012). Box's M can be sensitive to departures from the assumption of normality. Thus, as an additional check of homogeneity of variance was examined by Levene's Test of Equality of Error Variances was performed. There is a similar rationale with Levene's Test with Box's M tests. It assesses variance/covariance matrices within each category of the dependent variables (Tabachnick & Fidell, 2012). Results of the homogeneity of variance assumption was revealed that Levene's test results were not significant for mastery $F(2,230) = 2.149, p > .05$; physical condition $F(2,230) = 1.641, p > .05$; appearance $F(2,230) = .080, p > .05$; other's expectation $F(2,230) = .822, p > .05$; enjoyment $F(2,230) = 2.334, p > .05$ and competition $F(2,230) = .801, p > .05$. On the other hand, Levene's test results were significant for social relations $F(2,230) = 6.004, p < .05$ and psychological condition $F(2,230) = 3.656, p < .05$. Except for the two significant scores, non-significant results indicated that the homogeneity of variances assumption was almost met for this study. Therefore, the MANOVA results indicating the effectiveness of the independent variables on the dependent variables was interpreted with using the Wilk's Lambda value since the homogeneity assumptions were considered to meet (Tabachnick & Fidell, 2012).

Multivariate Analysis of Variance Results

There was a significant difference between sport type (team and/or individual sport) and motivational variables (Wilk's $\lambda = .807, F(16.000, 446.000) = 3.15, p < .05, \eta^2 = .10$) indicating sport type explained 10% variance on the motivation variables which is small effect (Cohen, 1988). Besides significant difference was found between physical activity level and motivational variables

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(Wilks' $\lambda = .83$, $F(16000, 442000) = 2.67$, $p < .05$, $\eta^2 = .09$) indicating activity level explained 9% variance on the motivation variables. Multivariate analysis of variance results can be seen on Table 2 below.

Table 2

Multivariate Analysis of Variance Results of the Study Variables

	Wilks' Lambda	F	Hypothesis df	Error df	Partial η^2
Sport type	.81	3.15*	16000	446000	.10
Activity Level	.83	2.67*	16000	442000	.09

Note * = $p < .05$

Univariate Analysis of Variance Results

According to results of multivariate analysis, sport type was significant when considered jointly on motivational variables. Still, the nature of relationship between the independent and dependent variables was unknown. More specifically, it was obscure that sport type variable was more effective on which DVs (e.g. mastery, psychological condition, appearance). Therefore, univariate ANOVA results were interpreted. Follow up test which was bonferroni correction was carried out. There were multiple comparisons in bonferroni correction procedure. In order to prevent inflation of Type I error, modification was implemented to alpha score (Green & Salkind, 2001). Alpha level was divided to the number of dependent variables according to this procedure. In this study there were eight dependent variables (motivation subscales). So, the new alpha level for all DVs' became .006 ($.05/8 = .006$). Univariate analysis revealed that there was a significant difference between sport type and other's expectation motivation ($F(2, 230) = 7.64$, $p < .006$, $\eta^2 = .06$). However, there were no significant difference between preference of physical activity (team and/or individual sport) and rest of the motivations for physical activity. According to results, team sport participants had significantly higher motivations with regard to individual sport participants' in other's expectations motivation. Similarly both kind of activity participants (team and individual) had significantly higher other's expectations motivation than only team sport participants as presented in Table 3 below.

Table 3

ANOVA Results for Sport Type and PA Motivations

Subscale	Sport Type	M	SD	df	F	Sig.
Mastery	Team	3.97	0.77	2 – 271	3.50	.032
	Individual	3.68	0.80			
	Team+ Individual	3.77	0.77			
Physical Condition	Team	4.42	0.78	2 – 271	.86	.427
	Individual	4.27	0.87			
	Team + Individual	4.34	0.58			
Social Relations	Team	3.12	0.94	2 – 271	3.12	.046
	Individual	2.81	1.16			
	Team + Individual	3.23	1.06			
Psychological Condition	Team	3.99	0.97	2 – 271	0.26	.769
	Individual	4.03	0.78			
	Team + Individual	4.13	0.85			

Appearance	Team	3.77	0.98	2 – 271	1.50	.228
	Individual	3.92	0.95			
	Team + Individual	4.10	0.88			
Others Expectation *	Team	2.28*	0.78	2 – 271	7.64	.001
	Individual	1.92*	0.86			T > I
	Team + Individual	1.73*	0.74			T > T+I
Enjoyment	Team	3.95	0.66	2 – 271	4.15	.017
	Individual	3.74	0.73			
	Team + Individual	4.03	0.50			
Competition	Team	2.92	0.92	2 – 271	2.57	.079
	Individual	2.59	1.01			
	Team + Individual	2.68	1.06			

Note * = $p < .006$

Finally, to figure out whether differences exist between college students' level of physical activity participation (MET scores) and their motivation for physical activity, one-way MANOVA was conducted. Prior to performing one-way MANOVA analyses, all necessary assumptions including multivariate normality, homogeneity of covariance/variance matrix, and homogeneity of variance were tested. As for the multivariate normality, Mardia's test was conducted and the assumption was not violated ($p > .05$). Homogeneity of covariance/variance matrix was tested by using Box's M test and the test was significant (Box's $M = 81.262$, $F(36, 126491.16) = 2,167$, $p < .05$). Therefore, homogeneity of variance was also checked by Levene's test (Field, 2009). F test results for each group were as follows; mastery $F(2, 228) = .01$, $p > .05$; physical condition $F(2, 228) = .211$, $p > .05$; psychological condition, $F(2, 228) = .425$, $p > .05$; appearance $F(2, 228) = .313$, $p > .05$; other's expectation $F(2, 228) = .775$, $p > .05$ and competition $F(2, 228) = .291$, $p > .05$. Except the two significant scores (enjoyment and social relations) non-significant results indicated that the homogeneity of variances assumption was met for this study. According to multivariate analysis of variance results, significant difference was found between physical activity level and motivational variables (Wilks' $\lambda = .83$ $F(16000, 442000) = 2.67$, $p < .05$, $\eta^2 = .09$).

Utilizing the Bonferroni method, each ANOVA was tested at the .006 level. Significant differences were found between physical activity level and mastery motivation ($F(2, 228) = 9.55$, $p < .006$, $\eta^2 = .08$). Physical activity level and enjoyment motivation ($F(2, 228) = 8.71$, $p < .006$, $\eta^2 = .07$). Physical activity level and competition motivation ($F(2, 228) = 6.38$, $p < .006$, $\eta^2 = .05$). Results revealed that higher physically active participants have higher motivations. College students who did not participate regularly to physical activities had lower motivation scores, and had similar tendency in the usage of motivational strategies. There were significant differences on the mastery, enjoyment and competition subscales. That is, there were significant differences in competition, mastery and enjoyment motivations among moderate and vigorous level physical activity participants as presented in Table 4 below.

Table 4

ANOVA Results for MET Score and PA Motivations

Subscale	MET Score	M	SD	df	F	Sig.
Mastery *	Low	3.40	1.11	2 - 271	9.55	.000 V > M
	Moderate	3.47 *	0.85			
	Vigorous	3.94 *	0.76			
	Total	3.70	0.86			
Physical Condition	Low	4.13	1.02	2 - 271	1.01	.0315
	Moderate	4.19	0.84			
	Vigorous	4.37	0.79			
	Total	4.27	0.84			
Social Relations	Low	2.54	1.24	2 - 271	4.76	.009
	Moderate	2.86	1.14			
	Vigorous	3.12	1.00			
	Total	2.96	1.09			
Psychological Condition	Low	3.77	1.04	2 - 271	.654	.521
	Moderate	4.01	0.91			
	Vigorous	3.95	0.90			
	Total	3.96	0.92			
Appearance	Low	3.20	1.10	2 - 271	3.32	.038
	Moderate	3.56	1.00			
	Vigorous	3.97	0.92			
	Total	3.73	1.00			
Others Expectation	Low	1.99	0.92	2 - 271	1.26	.286
	Moderate	1.91	0.89			
	Vigorous	2.08	0.82			
	Total	2.00	0.86			
Enjoyment *	Low	3.40	1.03	2 - 271	8.71	.000 V > M
	Moderate	3.62 *	0.77			
	Vigorous	3.93 *	0.63			
	Total	3.75	0.75			
Competition *	Low	2.58	1.18	2 - 271	6.38	.002 V > M
	Moderate	2.37 *	0.97			
	Vigorous	2.85 *	1.01			
	Total	2.62	1.03			

Note * = $p < .006$ **Discussion**

This study aimed to examine the motives to participate in recreational activities depending on a sample of Turkish college students. In this regard, gender, level of physical activity participation (MET scores), and preference of physical activity (team and/or individual sport) differences within motivational dimensions were investigated. The obtained mean scores indicated that physical condition was the most important participation motive for the total sample, while others expectations motive was found to be the least important participation motive. Given these results, it can be concluded that college students attach more importance to physical health related motives. While, what others think about their physical activity participation was rated as the least important factor. Along with the outcome of this study it can

be suggested that, practitioners should encourage individuals or groups to evaluate their success with regard to their own previous performances rather than in comparison to others (Kilpatrick, Hebert, & Jacobsen, 2002). This kind of goal setting will better improve motivation in recreational settings. Individuals are more likely to take part in physical activity when their reference for success is depend on the process of mastering a task rather than outperforming others (Kilpatrick et al., 2002). This kind of motivation tends to provide an environment free from the external pressures that are beyond one's control. In contrast, performance evaluation relative to others may lead tension and anxiety on the part of the students, decreasing motivation for individuals who are not highly skilled which ultimately may cause withdraw effort or participation (Kilpatrick et al., 2002). Parallel with this study, Ebben and Brudzynski (2008) found that maintaining fitness and health were the two most reported motives for the college students. Besides, in the study of Caglar, Canlan and Demir (2009) health motive was also found as the most important participation motive, whereas competition motive was reported as the least important participation motive for Turkish adults.

When physical activity participation motivations were compared with regard to gender, there was not any significant difference except for the appearance motivation. Contrary to literature, females rated appearance motive lower than males for engaging in physical activity. Many studies found that females had higher scores than males for extrinsic motives related to their body weight, physical attractiveness and appearance than do males (Butt, Weinberg, Breckon, & Claytor, 2011; Caglar et al., 2009; Egli, Bland, Melton, & Czech, 2011; Kilpatrick et al., 2005; Koivula, 1999). On the other hand, no significant difference was found between male and female college students for other physical activity motivations. In the previous studies comparisons of gender reflect similar patterns (Çetin, 2013; Furjan-Mandić, Kondrić, Tušak, Rausavljević, & Kondrić, 2010; Sunay, Müniroğlu, & Gündüz, 2004).

With respect to sport type difference, it was found that team sport participants had significantly higher motivations with regard to individual sport participants' in other's expectations motivation. Similarly both kind of activity participants (team and individual) had significantly higher other's expectations motivation than only team sport participants. Different studies found varied importance of the participation motives with regard to sport type. For instance, Morris, Clayton, Power, and Han, (1995) revealed that team sport participants rated affiliation as the primary motive for participation in physical activity. Chowdhury (2012) also indicated that team sport participants in Australian football were discriminated from tea kwon do, yoga, gym and tennis participants by the affiliation motive on the PALMS. However, Frederick and Ryan (1993) stated that individual sports participants had higher interest/enjoyment and competence motivation than team sport participants. These findings suggest that the participation motives clearly vary between different physical activities. It is logical that individuals take part in different physical activities for different reasons (Roy Chowdhury, 2012). Thus, physical activity types can be promoted in different ways to take advantage of variations in primary motives for participation, and may reduce the drop-out rates from activities (Molanorouzi, 2015).

The third aim of the current study was to investigate whether differences exist between college students' actual level of physical activity participation (MET scores) and their motivation for physical activity. Motives can predict the amount of physical activity people do and depending on the construct validity definition, if PALMS measures motives for physical activity participation, PALMS motives should predict amount of physical activity (Molanorouzi, 2015). Findings revealed that higher physically active participants have higher motivations and there were significant differences on the competition, mastery and enjoyment motivations among medium and vigorous level physical activity participants. Depending on these results, it can be concluded that PALMS motives predict actual amount of physical activity. In this regard, evidence for the construct validity of the PALMS was also provided.

Conclusion

Helping individuals or groups to initiate and/or continue to physical activity is a challenging task that necessitates flexibility and creativity on the part of practitioners who want to increase the activity levels of the people they work with (Kilpatrick et al., 2002). The knowledge of the most significant motives for physical activity participation according to variations of the individuals can help practitioners to lead individuals to activities that best suit them and that best motivate them which is very important to start and continue to any physical activity. Thus, PALMS profiling can help researchers to be able to use the PALMS in a prescriptive manner to give suggestions about the kind of physical activity which could be most rewarding for helping individuals to get more physically active and stay active throughout life (Molanorouzi, 2015). Overall, these results were obtained for profiling university students' physical activity participation patterns and their motivations for physical activity participation. In order to apply more effective market segmentation, we need to understand the preference differences among different groups. Each individual and specific group may have different motives for physical activity participation. According to our results, what is very clear is that there is a positive relationship between physical activity participation motivations and actual participation to physical activity. Depending on these empirical results, it can be concluded that motivation is a really important factor for leisure time physical activity participation and by increasing these motivations, physical activity participation rates can be increased.

The current study has some limitations that should be taken into accounts. The ability to generalize the current findings is limited because of the fact that only Middle East Technical University students were sampled.

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