

# Socio-Cognitive Determinants of Regular Physical Activity among College Students

**Mehdi Mirzaei-Alavijeh** (1)

**Ali Soroush** (2)

**Mostafa Nasirzadeh** (3)

**Naser Hatamzadeh** (4)

**Fazel Zinat-Motlagh** (5)

**Farzad Jalilian** (1)

**Mohsen Mohammadi** (6)

**Mohammad Mahboubi** (7)

(1) Department of Public Health, School of Health, Kermanshah University of Medical Sciences, Kermanshah, Iran

(2) Lifestyle Modification Research Center, Imam Reza Hospital, Kermanshah University of Medical Sciences, Kermanshah, Iran

(3) Department of Health Services and Health Promotion, School of Health, Rafsanjan University of Medical Sciences, Rafsanjan, Iran.

(4) Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran

(5) Social Determinants of Health Research Center, Yasuj University of Medical Sciences, Yasuj, Iran.

(6) Kermanshah University of Medical Sciences, Kermanshah, Iran

(7) Abadan School of Medical Sciences, Abadan, Iran

## Corresponding Author:

Mohammad Mahboubi,  
Abadan School of Medical Sciences  
Abadan, Iran

**Email:** mm59m@yahoo.com

## Abstract

Regular physical activity as an important health promotion behavior has many results in prevention or delay of chronic diseases and premature death. The aim of this study was to establish the determinants associated with regular physical activity among college students based on social cognitive theory (SCT). This study was a cross-sectional study carried out among 212 students in Abadan school of medical sciences, in the south west of Iran, during 2016. Data collection was self-report questionnaire in four parts including: demographic information, constructs of SCT, and standard international physical activity questionnaire – short form (IPAQ), social support. Data were analyzed by SPSS-16, and by using bivariate correlations and logistic regression at 95% significant level. About 61.7% (108/175) had low, 33.7 (59/175) moderate, and 4.6% (8/175) vigorous physical activity. Outcome expectation (OR=1.710), self-efficacy (OR=1.523), and friends' support (OR=1.149) was the best predictor for regular physical activity. It seems the planning and implementation of programs for physical activity promotion among college students is essential by emphasising on outcome expectation, self-efficacy, and social support.

**Key words:** Prevention, Health Promotion, Social Cognitive Theory, Life Style.

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## Introduction

Regular physical activity is a significant aspect of a healthy lifestyle and has different positive impacts. Generally, individuals who are more active and have a better body fitness will have health related problems less frequently (1). The lack of physical activity is considered as a potential risk for obesity, cardiovascular diseases and death resulting from them. In addition, such problems can account for an immense economic burden of developing countries (2). In many healthcare programs in health related domains, the physical and psychological advantages of regular physical activity for reducing health is shown with enough evidence (3). The results of numerous scientific studies have verified that even an average level of physical activity reduces the deaths resulting from cardiovascular disease and non-insulin-dependent diabetes mellitus (NIDDM) and has many protective advantages against hypertension, osteoporosis, colon cancer and obesity (4). The minimum physical activity for the protection and improvement of health in adults is 30 minutes with average intensity and for five days a week (5). Doing regular exercises (30 minutes a day, two or three days a week) is a proven way for reduction of total cholesterol, increase of high-density lipoprotein (LDL), low-density lipoprotein (HDL) and improvement of general health. In addition, epidemiological, clinical and experimental studies indicate that regular physical activity and exercise is critical for maintaining and increasing bone mass and physical strength and helps individuals in preventing osteoporosis-related fractures (6). The inclination towards sedentary lifestyle has increased with the advancement of technology in a way that a lot of time is spent watching television, working with computers, using car and elevator and the like and thus, the time is spent in a sedentary way, and despite the recommendations of health organizations for physical activities with average to high intensity during the week, inactivity is very common (7). On the other hand, many studies indicate that physical activity is reduced from adolescence to adulthood with the increase of age (8). These realities show the necessity of planning for the increase of physical activity in different groups in society and in this regard, different studies have shown that the prerequisite for any planning is the knowledge of the existing status of the problem in the target group of the program (9). In addition, it should be pointed out that human behavior is a reflection of different cognitive determinants and the use of the theories of behavior change, especially social cognitive theory, can guide experts in knowing the cognitive determinants impacting behavior (10). Meanwhile, SCT is one of the most common theories used for the analysis, regulation and change of many human behaviors including physical activity behavior and has a comprehensive view of the aforementioned socio-cognitive determinants (9). In terms of physical activity behavior, structures such as outcome expectation, outcome expectancies, self-efficacy, self-regulation and social support have been paid more attention (11). Comprehensive health education programs need to emphasize on psychological factors that mediate and predict health-related behaviors (12, 13). Considering that many studies were done in Iran without using the

comprehensive theory to predict physical activity, and furthermore, students in southern Iran because of hot weather and geographical conditions had lack of regular physical activity, our SCT based study focused on exploring cognitive determinants related to the regular physical activity in a sample of youth college students in Iran.

## Material and Methods

This cross-sectional study was conducted among 212 medical college students in Abadan school of medical sciences, the southwest of Iran; during 2016 (total students in this school were 537). Participants were selected in random sampling with probability proportional to size, and data were collected by using questionnaire in self-report. Only the subjects, who were students in Abadan school of medical sciences, were eligible to participate in this study. This study has been approved by the institutional review board at the Abadan school of medical sciences, Abadan, Iran (IR.ABADANUMS.REC.1394.59). Of the population of 212, 175 (82.5%) signed the consent form and voluntarily agreed to participate in the study.

The variables assessed in this study included four sections. Prior to conducting the main project, a pilot study was carried out. Initially the relevant questionnaires were administered to 25 students who were similar to study population in order to estimate the duration of the study conduction and to evaluate the reliability of the questionnaire.

### A: Background questions

Included; age (years), sex (male, female), marital status (single or married), live in dormitory (yes or no), and history of participants in sport club (yes, no).

### B: SCT constructs

This section included 28 items which were composed under four major constructs including (a) outcome expectation towards physical activity, (b) outcome expectancies towards physical activity, and (c) self-efficacy toward physical activity. SCT constructs was designed based on a standard questionnaire (11, 14). Five items were designed to measure outcome expectation (e.g., if I am active, I will be happy). Five items were designed to measure outcome expectancies (e.g., I will be happy after doing physical activity). Six items were designed to measure self-efficacy (e.g., I think that I can do physical activity every day). In order to facilitate participants' responses to the items, all items were standardized to a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). To estimate reliability alpha Cronbach coefficient was used for each constructs questionnaire: outcome expectation ( $\alpha=0.83$ ); outcome expectancies ( $\alpha=0.81$ ); self-efficacy ( $\alpha=0.84$ ) and social support ( $\alpha=0.87$ ).

### C: Social Support

Social support was evaluated by 12-item standard scale (15). Each item was measured on an ordinal 5-point Likert-type scaling (1=strongly disagree, 5=strongly agree). This included three domains; family, friend and other significant.

**D: International Physical Activity Questionnaire-IPAQ**  
A Persian form of international physical activity questioner -IPAQ (16) was used to measure physical activity.

Data were analyzed by SPSS version 16 using appropriate statistical tests including bivariate correlations and logistic regression at 95% significant level.

## Results

The mean age of respondents was 21.01 years [95% CI: 20.79, 21.23], ranging from 18 to 25 years. Almost, 58.9% (103/175) participants were female and 41.1% (72/175) were male. In addition, 3.4% (6/175) participants were married and 96.6% (169/175) were single. Furthermore, based on the results, 61.7% (108/175) had low, 33.7% (59/175) moderate, and 4.6% (8/175) vigorous physical activity.

Table 1 shows mean and standard deviation and bivariate correlations between the SCT constructs, which were statistically significant at either 0.01 level. The findings indicate that for the sample, outcome expectation was significantly correlated to self-efficacy ( $r=0.177$ ), and outcome expectancies ( $r=0.662$ ), and not significantly correlated with social support ( $r=0.122$ ). Outcome Expectancies were significantly correlated to self-efficacy ( $r=0.143$ ), and not significantly correlated with social support ( $r=0.058$ ). In addition, self-efficacy was not significantly correlated with social support ( $r=0.121$ ).

Logistic regression analysis in Backward step-wise model building procedure was conducted and finally on the 4th step the procedure stopped and the best model was selected, among the SCT constructs: outcome expectation (OR=1.710), self-efficacy (OR=1.523), and friends support (OR= 1.149) was the more influential predictor on physical activity (Table 2).

## Discussion

The findings of the present study indicated a high prevalence of inactivity in studied students in a way that 61.7 percent of them were in the low category in terms of physical activity and these findings are consistent with the findings of the study conducted by Moeini et al on students in western Iran (17). The findings indicate a low level of regular physical activity in Iranian students, compared with students outside Iran (18, 19). Several studies stated that college students in one of the most important groups should pay special attention to their health problems (20-22). The low statistics of regular physical activity in Iranian students and the lack of enough motivation for participation in such activities indicate the necessity of exploring the socio-cognitive determinants that impact on the creation of such behaviors in students.

Social cognitive determinants have a modifying role and are acceptable intermediates in innovative change in health related behaviors including physical activity. For example, their effectiveness related beliefs regarding the ease or difficulty of overcoming personal or environmental barriers of physical activity modify the relationship between natural occurrence of change in received social support and reduction of physical activity in middle-aged females (23).

Our findings indicated outcome expectation, self-efficacy, and friends support were the more influential predictors on physical activity. In this regard, overall, positive relationships have been verified between support received by individuals, self-efficiency and behaviors related to physical activity in a way that a study has shown a significant positive relationship of perceived self-efficacy, family support and friend support with physical activity related behaviors (24). Also, the social support of friends that has been verified in most studies on physical activity is proved in this study too. In fact, researchers found that

**Table 1: Predictor variables of physical activity based on bivariate correlation analysis**

	Mean (SD)	Scores Range	X <sup>1</sup>	X <sup>2</sup>	X <sup>3</sup>
X1. Outcome Expectation	20.86 (3.17)	5-25	1		
X2. Outcome Expectancies	20.02 (3.57)	5-25	0.662**	1	
X3. Self-Efficacy	14.48 (5.01)	6-30	0.177*	0.143	1
X4. Social Support	42.55 (8.77)	12-60	0.122	0.058	-0.121

\*P < 0.05; \*\*P < 0.01

**Table 2: Logistic regression analysis for SCT variables related to physical activity**

Variables	Odds Ratio	95.0% CI		P value
		Lower	Upper	
<b>Step 4</b>				
Outcome Expectation	1.710	1.378	2.106	0.001
Self-Efficacy	1.523	1.330	1.743	0.001
Social Support	1.149	1.001	1.318	0.048

for participation in physical activity young individuals need a motivator and friends are a motivator in this regard (25). This means that the encouragement by friends is a significant variable in doing physical activity by students while such a positive relationship is not observed for family support as students are with their friends in campus and are impacted by their peers more due to their age.

Knowing the amount of physical activity among students and the socio-cognitive determinants impacting them can help in timely intervention and health promotion planning for encouraging students to perform physical activity. The results of the present study indicated that outcome expectation, self-efficacy and friends support are among the socio-cognitive determinants that impact on and predict doing physical activity in students and these findings can be used in designing interventions.

The present study had some limitations such as data collection through questionnaire which can be accompanied by some errors. Also, the present study was conducted only on a small group of medical students in southern Iran and may not be generalizable to the whole Iranian student population.

## Conclusion

Overall, 61.7% had low, 33.7 moderate, and 4.6% vigorous physical activity; in addition, outcome expectation, self-efficacy, and friends support were the more influential predictors on regular physical activity among college students.

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