

Physical Activity and Stages of Change among College Students

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ABSTRACT

Background: To investigate of physical activity distribution bases on stages of change among Isfahan University of Medical Sciences central part of Iran.

Methods: Exercise behavior stages of change construct questionnaire were collected from 504 participants by using a convenience sample in May 2010.

Results: 73.8% of subjects were in earlier stages of exercise behavior (Precontemplation, contemplation, and preparation stages) and tended to be inactive. The exercise behavior was not influenced by age, education levels, and marital status.

Conclusion: The majority of the university students are suffering physical inactivity that need to design more effective physical activity promotion programs in the community and universities level.

Keywords: University; Student; Activity; Iran

Introduction

Regular physical activity contributes positively to physical and psychological health [1]. The risk factors and health- risk behaviors that contribute to adulthood chronic disease are established in childhood and adolescence [1]. However physical activity is known as one of the important issues in but a lot of studies reported, its levels are known to decline in early adulthood [2] and the low levels of exercise among the world's young people remain significant public health concern [3]. U.S Department of Health and Human Services (USDHHS)

developed the 2008 physical activity guidelines for Americans, recommending adults aged 18 or older engage in at least 150 minutes a week of moderate- intensity, or 75 minutes a week of vigorous- intensity physical activity but Ples & Lucas survey showed in the general population, 39% of adults were inactive and 61% never engage in any periods of vigorous- intensity physical activity [4]. Additionally data shows more than 80% of Iranian populations are insufficiently active [5].

One model applied to exercise behavior with success is transtheoretical model (TTM), developed by Prochaska and DiClemente in early years of 1980s for the cessation of a negative behavior (i.e. smoking) [6]. The TTM can also provide a useful lens for examining the issue of adoption and maintenance of physical activity [7]. "The TTM suggested rather than conceiving of exercise as an all-or-none phenomenon, the adoption and maintenance of an active lifestyle should be viewed as movement through a series of stages representing different levels of readiness for exercise" [8].

More than 73% of female students in Hamadan University (west of Iran) were in precontemplation, contemplation and preparation stage whereas 24.6% in action stage and only 2.2% in maintenance stage [10].

Based on the abovementioned background, the purpose of the current study was to apply stage of change to assess status of physical activity among Isfahan University of Medical Sciences central part of Iran based on TTM.

Materials and Methods

In a cross-sectional study a convenience sample of 504 Isfahan University of Medical Sciences students were recruited from undergraduate and postgraduate in May 2010. All of the students were eligible to participate in the study. In addition, verbal informed consent was obtained from participants before completing questionnaire. All data were collected anonymously and no incentives were offered for completing the survey. The study questioner explained the study objectives. The participants were completed within 10 to 15 min. The response rate was 84% from 600 eligible participants. The participants completed Persian version of exercise behavior stages questionnaire and selected demographic information. A stage of exercise behavior

measure is 5-item; dichotomous scale (yes/no) related to current exercise behavior and future intentions to exercise [10,11]. The reliability and validity of the this measure have been well established by Marcus et al., with a Kappa Index of Agreement over a two week period of 0.87 [11]. The stage definitions were employed as follows: Precontemplation (not intend to regular exercise in the next 6 months); Contemplation (intend to regular exercise in the next 6 months); Preparation (intend to regular exercise in the next 30 days); Action (exercise regularly less than 6 months); Maintenance (exercise regularly more than 6 months).

Physical exercise was defined as any planned physical activity (e.g., brisk walking, aerobics, jogging, bicycling, swimming, rowing, etc.) performed to increase physical fitness. Such activity should be performed 3 to 5 times per week for 20-60 minutes per session. Data analyses were analyzed using by Mann-Whitney U and Kruskal-Wallis H tests. Alpha level set at $P \leq 0.05$.

Results

The average age was 22.9 years (SD=4.2), with a range of 18-47 years. 54.1% were female, 87.6% unmarried, and 84.6% were undergraduate. The participants' demographic characteristics and exercise behavior stages of changes are shown in Table 1.

According to exercise behavior, 53.9% were in precontemplation stage, 4.8% in contemplation, 15.1% in preparation, 12.1% in action, and 14.1% in maintenance.

Between gender and stages of exercise behavior was a significant relationship ($Z = -3.636$, $P = 0.001$). However, no significant was with marital status. Additionally, students exercise behavior was not influenced by educational level, and age.

Table 1: The five stages of exercise behavior, and Mann-whitney and Kruskal-Wallis tests for gender, marital status, educational level, and age in Iranian students

	Pre-contem- plation n (%)	Contem- plation n (%)	Prepara- tion n (%)	Action n (%)	Maintenance n (%)	z/ X ²	P- Value
Gender							
Female	159(58.7)	15(5.5)	49(18.1)	25(9.2)	23(8.5)	Z=- 3.636	0.001
Male	111(48)	9(3.9)	27(11.7)	36(15.6)	48(20.8)		
Marital Status							
Unmarried	227(52.1)	23(5.3)	72(16.5)	53(12.2)	61(14)	Z=1.27 9	0.201
Married	40(64.5)	2(2.6)	4(6.5)	6(9.7)	10(16.1)		
Educational level							
Undergraduate	222(52.1)	23(5.4)	71(16.8)	52(12.2)	58(13.6)	Z=-986	0.324
Postgraduate	49(62.8)	1(2.6)	5(6.5)	9(11.7)	13(16.7)		
Age							
25≤	197(51.5)	23(6)	64(16.7)	47(12.3)	52(13.6)	X ² =4.062	0.131
25-30	49(64.5)	1(1.3)	7(9.2)	11(14.5)	8(10.5)		
≥30	11(50.5)	0(0)	3(13.6)	0(0)	8(39.4)		

Discussion

The results indicated that about three - quarters (73.8%) of the subjects tended to be inactive. These results were not in consistent with those reported by others [12-14]. They reported higher rates of the students and adolescents were in later stages (action and maintenance) of exercise behavior. All of these findings related to developed countries where the regular physical activity is accepted and well organized in their culture. In this regard, the volunteer samples of the current survey should

be considered. Kim [15] reported similarly to the current results that 46.5% of the adolescents were in precontemplation, 7.5% in contemplation, 35.1% in preparation stage.

The high ranges of inactive and sedentary students are annoyed. Bases on TTM research for sedentary subjects' move from inactive stages to active stages the emphasizing on the personal, long-term benefits of physical activity, a decrease in the barriers and cons of exercise will

be useful in facilitating adoption exercise. Isfahan University of Medical Sciences has a good facility in domain of exercise but current surveys shows that the most of the students are inactive. Hence, it is necessity for stage-matched intervention for improving health related activity especially in physical activity. Providing information about the pros of exercise and considering of sedentary life risks should be targeted for the individuals are in the earlier stages especially in precontemplation.

The findings revealed that the exercise behavior was influenced by gender. According to Table 1, 82.3% of the female and 63.6% of male students were sedentary and in earlier stages. This finding may be from cultural limitation of exercise in Iranian female gender such as biking and juggling in the sight of the public. However, inactive life especially in female students is major risk factor for osteoporosis and other life threatening diseases like cardiovascular disease, malignancy, and diabetes mellitus. A result of a study pointed out that 70% of women and 50% of above 50 years of Iranian population are suffering from or at risk of osteoporosis [16].

In the current study, the exercise behavior was not influenced by age, education levels, and marital status. More activity and healthier life in younger is expected in undergraduate students rather than post-graduates. Postgraduate and married students are busier and on-duty rather than undergraduates and expected to be more inactive, but the results did not support this issue.

This study has limitations in its generalization. The study used a cross-sectional and convenience sample. Another limitation is the self-report nature of questionnaire in spite of the anonymous nature of the questionnaires. Future research is necessary to address these limitations and longitudinal designs are recommended in order to examine the stability of different exercise predictors across time.

Conclusion

The results of the current study showed that the majority of the students are inactive and do not meet the recommended levels of exercise behavior. Due to well-established benefits of regular exercise, it is necessary to tailor intervention to increase the physical activity among subjects.

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