

## Peer Education Physical Activity Promotion Program among Iranian Guidance Student Based on Theory of Planned Behavior

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**Abstract:** *Background:* Reduction of physical activity among adolescents one is the most important problems of society. Regular physical activity has been established as a mechanism to prevent and treat various chronic illnesses such as heart disease, diabetes, cancer, obesity, osteoporosis and psychological ailments. *Objectives:* The aim of this study is determine effects of training programs to promote physical activity among school students by using the theory of planned behaviour. *Methods:* This study was conducted among guidance student in Gachsaran. Four guidance schools randomly selected within all boy and girl guidance school. 150 participants as intervention and 150 as control groups were enrolled at the baseline survey, of whom all were followed up after 2-month intervention. *Results:* The age range of students was between 11 and 15 yr and mean 12.78 (SD = 0.98). 154 student girl (51.3%) and 146 student boy (48.7%).there were a statistical significant difference for mean score of attitude (p-value = 0.003), intention (p-value = 0.000), subjective norms (p-value = 0.013), perceived behavioural control (p-value = 0.001) and increasing physical activity (p-value = 0.000) among interventional group after implementing education program. *Conclusion:* Considering that the present curriculum was effective on improving physical activity levels of students; it seems that if the behavioural theories and models analysis in education programs can be properly used beneficial results have be followed.

**Key word:** Physical activity • Students • Theory of planned behaviour

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### INTRODUCTION

Regular physical activity has been established as a mechanism to prevent and treat various chronic illnesses such as heart disease, diabetes, cancer, obesity, osteoporosis and psychological ailments [1]. Physical activity during childhood and adolescence is crucial, as it contributes to a normal skeletal development and is necessary for young adults to attain and maintain an appropriate bone mass. Moreover, teenager's physical activity has been consistently associated with higher levels of self-esteem and lower levels of anxiety, stress and gain psychological health [2]. Inactive people have more than double the risk of heart attack, whilst appropriate physical activity programmers reduce the risk of mortality after heart attack by about 20%. It is also estimated that one quarter of stroke incidence could be avoided by appropriate exercise and that physical inactivity may be responsible for up to a threefold

increase in the risk of stroke among middle aged men. Also should be added that the range of negative impacts from insufficient physical activity is dramatic and a lack of physical activity has been identified as one of the ten leading global causes of death, disease and disability [3]. Physical activity is inversely associated with several health outcomes in adults. Individuals who are more active and fit have lower risks of depressive symptoms and may have a lower risk of obesity and osteoporosis. Given the growing wealth of evidence of the health benefits of a physically active life, efforts to increase physical activity among adults have proliferated. Moreover expert's advocate promotion of physical activity among children and adolescents for health enhancement and to install lifelong behavioural patterns that will result in more active and fit adult populations in the future [4]. For these reasons recommended that engage in 30 minutes of at least moderate intensity activity on at least five days of the week [5]. But, while the

positive effects of regular physical activity participation are well established in children and adolescents, there is evidence to demonstrate that young people in many developed nations do not participate in enough physical activity of the type and intensity associated with health benefits [6]. In this regards the low prevalence of regular leisure time physical exercise is a cause for concern in many countries [7]. And increasing population levels of activity therefore continues to be a major public health challenge [8].

The worldwide reduce physical activity as well as Iran indicates necessity of designing comprehensive and effective interventions to promotion physical activity among adolescents student. In the field of promotion physical activity research, it would be useful to know how cognitive related factors like knowledge, social norms or beliefs are responsible to predict intention and consequently behaviour. In addition to sufficient information, certain psychosocial factors, such as attitude, subjective norm and perceived behavioural control, seem to be significant factors in determining the probability of adopting or rejecting a healthy behaviour. In this regard, the theories of planned behaviour in numerous studies as a research theoretical framework were applied; and several studies have also reported TPB variables' predictability to explain physical activity among student [9-11]. The objective of this study was designing and implementing a peer based educational intervention to promotion physical activity among students based on theory of planned behaviour.

## MATERIALS AND METHODS

**Participants:** This study was conducted among guidance student in Gachsaran during 2009–2010. Four guidance schools randomly selected within all boy and girl guidance school in Gachsaran, Iran. Of the 665 student enrolled at the four schools, 300 (45.11%) student participated in this study. 150 participants as intervention and 150 as control groups were enrolled at the baseline survey, of who all were followed up after 2-month intervention. This study was conducted with approval from Tehran University of Medical sciences' institutional review board. Informed assent and consent were obtained from participants.

**Measures:** Prior to conducting the main project a pilot study was carried out. Initially the relevant questionnaires were administered to 30 students who were similar to

participants in the main study to obtain feedback about the clarity, length comprehensiveness, time of completion and also internal reliability of the measures. Moreover, participants were instructed about how to fill questioners before gathering information.

**Background Variable:** Background data collected in this research include: age, gender (boy/girl), parent education (elementary; secondary; high school; and university), parent job, Family income and History of sports club membership.

**Behavior (Physical Activity):** For physical activity were used an international physical activity questioner (IPAQ) [12].

**TPB Theoretical Variables:** The items which assessed components of the TPB were modified from scales of physical activity related attitudes and intention to doing physical activity (Armitage [10]; Hagger [11]) for physical activity practice and 23 items were composed under four major constructs, [1] attitude positive toward physical activity; [2] subjective norms about physical activity; [3] perceived behavioral control to physical activity; [4] behavioral intention to physical activity. Nine items were designed to measure attitude toward physical activity (e.g., "If I were to be regular physical activity it would help me cope with stress."). Six items were designed to measure subjective norms toward physical activity (e.g., "My best friend thinks I should be regular physical activity"). Four items were designed to perceived behavioral control toward physical activity (e.g., "For me to have regular physical activity would be difficult"). Four items were designed to evaluate behavior intention toward physical activity (e.g., "I intend to regular physical activity a next month"). In order to facilitate respondents' responses to the items, all items were standardized to a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). Estimated reliability coefficients for each TPB constructs questionnaire were as follows: attitude ( $\alpha = 0.70$ ); subjective norms ( $\alpha = 0.73$ ); perceived behavior control ( $\alpha = 0.75$ ) and behavioral intention ( $\alpha = 0.72$ ). These results demonstrated that questionnaires were internally consistent.

**Procedure:** This was a longitudinal randomized pretest - posttest series control group design panel study to implement a health education based intervention to promotion physical activity among a sample of student recruited from four randomly selected guidance student in

Gachsaran, Iran. After obtaining informed consent participants were enrolled in the study, a structured questionnaire with the aforementioned measures was distributed to the student to complete. Prior to the self-administration of the questionnaire, study staff explained the logistics of answering different type of questions and clarified any concerns and questions that were raised by participants. The intervention aimed to promotion physical activity in participants. The intervention activates were tailored and implemented based on student educational needs assessment based on TPB. Educational planning in this study was based on active learning and during the intervention was attempted to students actively participate in educational programs. education have used methods such as lectures, group discussions, peer groups and to use booklet, pamphlets and CD regarding physical activity for intervention groups students that was performed in four stages.

**First Stage:** Before starting education programs in intervention groups schools, attempting to print slogans on physical activity and install in the hall and class course and also reading a sport slogan in the morning, that purpose of this was the sensitization of inervention group to education and make chance to physical activity.

**Second Stage:** These step was conducted by teachers and education administrators and parents groups education, in 60-minute education sessions. Administrators and teachers in educational sessions were taught about the importance of exercise and the role of exercise in physical and mental health of students and teachers and parents role in encouraging students to perform physical activities. Teachers, administrators and parents were asked to promoting and encouraging students to be active lifestyle by encouraging verbal support and create encouragement and supportive environments for physical activity in schools. For this purpose a educationasl manual was placed at their disposal (emphasis on the impact of subjective norms).

**Third Stage:** One of the educational methods used by researchers in the study was the use of peer groups education, for this purpose from 20 students (10 female students and 10 male students) that were active in a sport and interested in cooperation in this area were selected and conducted educational programs for their in order to they can have educational facilitator role to the other participants in the intervention group. For these students a two-hour training program was implemented.

**Forth Stage:** It consists of six 60 to 90 minutes educational sessions for students that conducted by the researcher and a female master of physical education (for holding classes in girl's schools), a male master of physical education (for training classes boys schools) and an a one aerobics instructor.

**The Educational Sessions Include:** Session one: Orientation educational purposes, to draw attention to educational programs and the role of physical activity on life.

**Session II:** Emphasis on attitude structure, complications and diseases caused by sedentary life style.

**Session III:** Emphasis on perceived behavioral control structure, the amount of physical activity rate in different ages.

**Session IV:** Emphasis on behavioral intention structure, the effect of exercise on health and exercise activities benefits.

**Sessions V and VI:** Aerobic education classes.

**Data Analysis:** Analyses were conducted by using SPSS-13 and a probability level of 0.05 was used throughout. Cross -tabulation and T-test were employed to determine comparability of the intervention in compare with control group.

## RESULTS

Before the intervention, both groups were matched for background variable such as: age, grade and gender, history of sports club membership, parental job and family income.

The age range of students was between 11 and 15 yr and mean 12.78 (SD = 0.98). 154 student girl (51.3%) and 146 student boy (48.7%). 102 student (34%) were study in the first base, 108 student (36%) were study in second base and 90 (30%) student were study in third base.

Tables 1 show the mean and standard deviation of TPB variables in the groups before and after of educational intervention, respectively. In the before of education stage the t-test, do not detect significance differences between two groups TPB variables. However after education there is significant difference between TPB variables between groups.

Table 2 also doing physical activity before and after educational intervention among two group shows.

Table 1: Comparison between the mean scores of TPB variables in the groups before and after of educational intervention

Variables	Pre-intervention Mean (SD)	2 months later intervention Mean (SD)	Tests result
<b>Attitude</b>			
Experimental group	37.04 (5.02)	38.86 (4.17)	0.000
Control group	37.14 (5.70)	37.21 (5.20)	0.634
<b>Subjective Norms</b>			
Experimental group	22.88 (4.37)	24.45 (3.35)	0.000
Control group	23.25 (4.41)	23.34 (4.26)	0.443
<b>PBC</b>			
Experimental group	13.80 (2.88)	15.48 (2.32)	0.000
Control group	14.31 (3.23)	14.38 (3.22)	0.304
<b>Intention</b>			
Experimental group	14.98 (3.60)	16.92 (2.51)	0.000
Control group	15.49 (3.59)	15.53 (3.50)	0.611

Table 2: Physical activity practice before and after educational intervention among two groups

Physical Activity	Pre-intervention Mean (SD)			2 months later intervention Mean (SD)			X <sup>2</sup>		P-value		Variables	
	low	moderate	severe	low	moderate	severe	Pre- test	Post- test	Pre- test	Post- test		
Experimental group	99	51	0	50	86	14	0.59	28.356	0.808	0.000		
Control group	97	53	0	88	62	0						

## DISCUSSION

The aim of this study was to assess the effectiveness of a physical activity education program among guidance students. The theory of planned behavior was conducted as theoretical framework to assess educational need assessment among participants. Even though the duration of the educational intervention in this study was short, it was found significant improvements after manipulation. Analysis of the baseline and 2- Months follow-up clearly demonstrated significant intervention effects on the participants' attitude, subjective norms, perceived behavioural control, behavioural intention and physical activity practice among intervention group.

Results related to the attitude showed a significant increase in intervention group student attitude to do physical activity after completion of educational programs. Effectiveness of education programs on promoting a positive attitude in dealing of with physical activity in students also has been shown in other studies (13-14). Also according to the results, control group student attitudes towards physical activity were positive too (average score 37.21 of 45 score) but a positive attitude to increase physical activity among them is not enough. In this regard; Hazavehei [13] in his article points out that attitude alone can not yield to ensure behaviour and despite the relation between attitude and behaviour with each other, according to theories behaviour another different factors can effect on behaviour, including the intention and subjective norms, which also placed it still necessary to apply models and theories on behaviour change issues will confirm.

Support from family and friends are one of the facilitating factors in sport behavior [15]. In this study the use of peer groups education and students willing to cooperate in providing education to his classmates, holding educational sessions for teachers and families of intervention group students has been able to have a positive affect on subjective norms associated with physical activity increase, that is consistent with the results of a Hazavehei [13], Wallace [16] and Downs [17] studies.

Several studies [7-8] showed the positive role of perceived behavioural control in physical activity. Our results show usefulness of educational interventions for increased behavioural control among student.

Collette and Terry reported improve physical and mental health as the most important benefits of physical activity in healthy populations [18-19]. Regarding the physical activity practice before the intervention between two groups did not differ significantly, but the results indicate promote physical activity among students in the intervention group when educational program completed. In this regard, Hertz [20] in their study by using the social cognitive theory on high school students showed that physical activity classes increased levels of moderate physical activity outside school hours. Also Hazavehei in their study based on BASNEF Model [13] have reported increase physical activity among student after education. In this regards; Teymouri [21] and Sallis [22] in their articles have mentioned usefulness of classes in the promotion of physical activity.

Considering that the present curriculum was effective on improving physical activity levels of students; it seems that if the behavioural theories and models analysis in education programs can be properly used beneficial results have be followed. Also provide the public sports programs from health planners affairs, more attention to physical education lessons in schools, providing facilities for physical exercises in schools, parks and public places, emphasis on the benefits of regular physical activity, educational classes for families of students to more attention to their children sport and physical activity and offer solutions to overcome barriers to physical activity, are strategies that can be used to increase physical activity among students.

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