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The Relationship between Physical Self-Efficacy and Goal-Orientation with Physical Activity Enjoyment in Adolescents

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Abstract

The present study has been conducted with the aim of determining the relationship between physical self-efficacy and goal orientation with physical activity enjoyment in adolescent girls and boys. Participants in this study were 584 adolescent girls and boys (aged 15 on average) from Tehran, Isfahan and Ghazvin provinces of Iran. Measurement tools for the study included Ryckman's physical Self-Efficacy Questionnaire, Duda's Goal Orientation Questionnaire and Motl's Questionnaire of Physical Activity Enjoyment. For data analysis, Pearson's correlation coefficient, multivariate ANOVA and multivariate regression were used ($P<0.05$). Findings of the study showed positive significant correlation between perceived physical ability, Physical Self-Presentation Confidence, task-orientation, ego-orientation with enjoyment of physical activity. In the micro-scale of physical activity enjoyment, significant difference was observed between girls and boys. Results of multivariate regression showed significance of the model. Findings revealed that by improving physical self-efficacy and goal orientation in adolescents, enjoyment of physical activity can be increased and thus, physical activity boredom can be reduced and finally, increased physical activity enjoyment can be considered a factor in increasing physical activity participation and adherence to it in adolescents.

Keywords: adolescent, boredom, enjoyment, goal orientation, physical self-efficacy.

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Introduction:

Physical activity is defined as every physical movement produced by skeletal muscles, which requires energy and places positive effects on mental and physical health in both therapeutic and non-therapeutic domains. According to World Health Organization, lack of physical activity has been considered as the fourth major risk factor for global mortality (WHO, 2010). Although average to high physical activity can reduce healthcare costs, prevent various illnesses and disabilities and improve life quality, quickest physical activity declines occur during adolescence and youth (Ahn and Fedewa, 2011; Larun et al, 2006). Although approaches for increasing physical activity are growing, extent of impacts is typically low to average and no effective interference is not applied (Bauman et al, 2012). In our society, Iran, physical activity culture is not much widespread especially among women and many of the country's population are affected by physical inactivity (Taymoori, Rhodes and Berry, 2011). According to conducted studies, 67 percent of Iranian population have an inactive lifestyle (Moeini et al, 2011; Solhi et al, 2012). Thus, considering the importance of physical activity in health maintenance, inactivity in this group of society imposes heavy expenses on healthcare system of the society (Husseini et al, 2013). Stice, Shaw and Marti (2006) considered forty six scientific studies regarding factors affecting overweight and found that participation in physical activities during early life has the highest impact on continued activity during adulthood. Besides, studies have always showed that attention to the relationship between mental factors and physical activity is important in development and evaluation of interference for enhancing the level of adolescents' physical activity (Sallis et al, 1999). Research regarding factors related to physical activity has flourished over the last two decades, but has mainly focused on individual factors in high-income countries (Bauman et al, 2012). Over past years, many studies have been conducted with the aim of increasing physical activity, but a few have achieved their goal, because beliefs and views underlying human behaviors have been ignored (Im E-O, 2010). To study overweight and obesity, appropriate actions must be taken to induce long-term changes in behavior and socio-cognitive view of individuals (Parsamehr, 2015). Considering the subject of commitment to physical activity and practice, there are many theories in relation to motivation of physical activity, such as Achievement goal theory (Nicholls, 1984) and competence motivation theory (Harter, 1981). Furthermore, the Sport Commitment Model (Scanlan, 1993) sees physical activity enjoyment an important factor in children and adolescents (Sallis, Prochaska and Taylor, 2000; Van Der Horst et al, 2007). In review studies conducted in relation to physical activity, a strong positive link between physical activity enjoyment and physical activity involvement has been observed (Sallis et al, 2008; Hutchinson, Leblance and Booth, 2006). Relationship between physical activity enjoyment and physical activity commitment on the one hand and relationship between physical activity and mental health on the other hand reflects importance of enjoyment in guaranteeing physical activity benefits. View on physical activity might be severely impacted by how individuals think about physical activity (Husseini, 2010). In other words, it is the attitude, opinion, and view or judgment about the behavior's being good or bad (Plotnikoff et al, 2011). For example, when individuals enjoy a physical activity, they consider it a positive activity and this view is important in performing physical activity (Jewson, Spittle and Casey, 2008). In this regard, studies have shown that self-efficacy in conducting physical activity and social environment can influence physical activity attitude (Im E-O, 2010). Bandura's social cognitive theory (2004) is a suitable model for determining cognitive social structure of physical activities in adolescents and youth. Social cognitive variables are acceptable adjusters and mediators in changing health-related behaviors like physical activity. The main

determinant which is the factor addressed by social cognitive theory is self-efficacy. Alongside the Bandura model, other studies identified self-efficacy strategies, reception obstacles and extent of enjoyment as variables that regulate participation in physical activity. Relying upon Bandura's cognitive social learning model, Dishman et al (2005) suggested social cognitive criteria for considering physical activity in adolescent girls to be self-efficacy to overcome physical activity obstacles, self-efficacy strategies, physical activity reception obstacles, expectations pursuant to physical activity, physical activity enjoyment, and physical activity social support. In general, self-efficacy is considered the main factor through its involvement in determining each variable of social cognitive theory. Activities conducted to increase self-efficacy result in increased behaviors related to physical activities (Parsamehr, 2015). In their work, Liang Ho et al (2015) concluded that manipulating physical self-efficacy significantly influenced physical activity enjoyment of Chinese adolescents. According to Beth et al (2015), enjoyment was a stronger predictor than self-efficacy and interventions must first be focused on increasing physical activity enjoyment. However, Im E-O (2010) suggested that self-efficacy is the most relevant factor to physical activity and considered a significant predictor for women's participation in physical activity. Bauman et al (2012) also considered self-efficacy a significant determinant in physical activity of children and adolescents. Sallis and colleagues (1999) named factors related to physical activity among adolescent girls and boys as self-efficacy, goal setting, self-determination, task orientation, and perceived competence.

As inferred from mentioned literature, besides influence of enjoyment and physical self-efficacy on participation in physical activity, other factors can be considered as major influences on physical activity involvement. From among these factors is goal orientation. Our behavior is generally motivated by tendency of achieving a certain goal. In fact, every behavior is a series of activities, and to predict individuals' behavior, their motivations or needs must be identified. On the one hand, type of the goal we choose determines our determination for achieving that goal (Moshtaghi, 2012). One of the newest approaches suggested over the last three decades in psychology of motivation is the theory of goal orientation (Shams and Roudbar, 2011). Ames (1992) defines goal orientation as a coherent pattern of the individual's beliefs, attributions, and emotions that determine their behavioral purposes and result in their showing more inclination toward some occasions and act a certain way in those occasions. White and Duda (1994) showed that motivation for participation is a result of individual orientation. Those who are known as task-oriented, tend to take part in physical activity for reasons of developing or achieving skill, dependency and fitness. In contrast, those who are known as ego-oriented, tend to participate with the motivation of social occasion, competition and recognition (Coleman et al, 2007). As it was said, a common reason for participation in physical activity is enjoyment or recreation, but despite its importance in perceiving participation motivation, its concept has been defined weakly and is often misinterpreted. Sikzentimilai (1990) who defined enjoyment as a trend or process, states that enjoyment occurs when one's ability or skill conform to demands of the activity, but boredom results from non-conformity (is either too easy or too difficult). Another aspect was suggested by Scanlan and Liutuit (1986) who defined enjoyment as a positive product of participation. Aside from discussion of process versus product, findings of the studies show importance of variables in adolescent's activities. Significant advantages of enjoyment in physical activity involve mostly task-orientation (Tanenbaum & Eklund, 2007). Results of several studies show predictability of participation in physical activity via task-orientation, but suggest ego-orientation as mostly a weak predictor for participation in physical activity (Papaioannou &

Theodorakis, 1996). On the other hand, it is noteworthy that with the beginning of youth, an increase in the share of ego-orientation for predicting tendency of participation in physical activity caused (Nicholls, 1978).

As suggested by literature, two important variables influence physical activity, goal orientation and physical self-efficacy. On the other hand, enjoyment of physical activity is per se one of the major factors of physical activity and commitment to it among youth. Given the importance of physical activity and effect of the youth's commitment to it on society health and decreasing medical costs in adulthood and in old age, it seems necessary to identify enjoyment-related factors from physical activity. Additionally, most studies conducted with regard to the factors affecting physical activity have not considered the effect of enjoyment on physical activity in adolescence age, with most of these studies conducted in high-income countries. Considering reduced physical activity among Iranian adolescents, especially among women, conducting a study in relation to physical activity enjoyment-related factors among Iranian adolescent girls and boys seems necessary.

Research methodology

The population, sample and sampling

620 students were selected from first and second high school grades from Tehran, Isfahan, and Ghazvin via cluster sampling from different regions of the three provinces and 46 were excluded because of incompleteness of questionnaires and, overall, questionnaire results of 584 students aged 13 to 18 years old were analyzed. Participants of this study included 298 schoolboys (aged 15±0.07 on average) and 286 schoolgirls (aged 15±0.06 on average) in first and second high-school grades. In this study, participants included three age groups of adolescence (based on adolescents' developmental periods of Ehrenberg et al): early adolescence (13 to 15 years), middle adolescence (15 to 17 years), and late adolescence (17 to 19 years).

To select the above sample, with cooperation of Education Bureau of Tehran, Isfahan, and Ghazvin, 16 girls' and boys' schools from different regions of these provinces were selected and the questionnaires were completed by students in intended schools with former arrangement between two academic semesters.

Research tools

a) Physical Activity Enjoyment Scale (PACES): This scale was designed by Motl et al (2001) to evaluate physical activity enjoyment in adolescent girls. The questionnaire is the improved version of original 18-item questionnaire of physical activity (Kendzierski and Decarlo, 1991). The improved questionnaire includes 16 phrases starting with the sentence “When I do physical activity...” with each phrase scored in the five-value Likert scale 1) strongly disagree, 2) disagree, 3) nor agree nor disagree, 4) agree, and 5) strongly agree. This scale is usable for both children and adolescents. The scale's credibility in Iran was calculated by Ahmadi et al (in print) via confirmatory factor analysis for validity test of questionnaire, Chronbach's alpha for inner reliability testing of questions (enjoyment factor, 0.90 and boredom factor, 0.82 percent) and via intra-class correlation coefficient for temporal reliability test (enjoyment factor, 0.74, and boredom factor, 0.73) with a one-week interval. Based on confirmatory factor analysis, this questionnaire was confirmed by two factors, with the first i.e. physical activity enjoyment consisting of 9 questions and the second i.e. physical activity boredom consisting of 7 questions.

b) Physical Self-Efficacy Questionnaire (PSE): This questionnaire evaluates one's perception of their physical ability and certainty in performing physical activity and skill and has been designed by Ryckman et al (1982). The scale has two sub-scales and is usable for adolescents aged 12 to 18. Participants are asked to evaluate their degree of agreement or disagreement regarding any of statements in the 6-value scale from strongly disagree to strongly agree. 10 expressions in this questionnaire deal with the perceived physical activity subscale and 10 expressions deal with the subscale of physical self-presentation confidence. Ryckman et al (1982) reported the scale credibility as 0.80 for the whole scale, 0.85 for the first subscale, and 0.69 for the second subscale. Temporal reliability of the scale in Iran was calculated via test-retest with a two-week interval in 43 students as 0.81 (Tahmasbian, 2005). Reliability of test correlation using physical self-concept test has been reported as 0.58 (Ehrenberg et al, 1991).

c) Task and Ego Orientation in Sport Questionnaire (TEOSQ): This questionnaire was designed by Duda et al (1989) to determine whether one defines sport success as achieving higher skill or better performance compared with others. This questionnaire consists of 13 questions, with the questions involving two aspects of task-orientation and ego-orientation. Seven questions evaluate task-orientation and six remaining questions measure the ego-orientation aspect. Each statement is scored according to the 5-value Likert scale (1: strongly disagree, 2: disagree, 3: neither agree nor disagree, 4: agree, 5: strongly agree). Goal orientation questionnaire has already been used and evaluated by Shamshiri (1999) on Tehran athlete students, Keshtmand (2004) on Kermanshah athlete students, and Bahrami and Yousefi (2004) on Lorestan wrestlers. Its reliability has been confirmed using Chronbach's alpha and reported to be over 0.80 (Zendekar, 2009).

The Analysis of Data

To obtain descriptive attributes of participants, mean and standard deviation were used. Correlation of subscales of physical self-efficacy and goal orientation with physical activity enjoyment was obtained using Pearson's product-moment correlation. To predict physical activity enjoyment and physical activity boredom using physical self-efficacy variables and goal orientation, multiple regression analysis was used. Also, to compare the scales of physical activity enjoyment, self-efficacy, and goal orientation in the two boys' and girls' groups, multivariate ANOVA with 0.05 level of significance was used.

Research Findings

To investigate subscales of physical self-efficacy (perceived physical ability and physical self-presentation confidence), goal orientation (task orientation and ego-orientation) and physical activity enjoyment (physical activity enjoyment and boredom) among the two groups of girls and boys, multivariate ANOVA was used. Results of this analysis is included in table 1.

Table 1: comparison of subscales of physical activity enjoyment, self-efficacy, and goal orientation in girls and boys

Independent variable	Dependent variable	MS	Df	F	P
	Perceived physical ability	10.21	1	0.25	0.61
	Physical self-presentation confidence	66.85	1	1.54	0.21

Gender	Task orientation	63.40	1	2.30	0.12
	ego-orientation	21.42	1	1.30	0.25
	Physical activity enjoyment	227.06	1	4/1*	0.04
	Physical activity boredom	106.13	1	3.35	0.06

*P<0.05 **P<0.01

Given the results of multivariate ANOVA in table 1, significant difference was observed between girls and boys in terms of physical activity enjoyment subscale (P=0.04, F=4.1, df=1, MS=227.06) (P<0.05), where according to means, boys had higher score in physical activity enjoyment variable (boys=34.68, girls=33.44) than girls. On the other hand, no significant difference was observed between boys and girls in the subscales of perceived physical ability, physical self-presentation confidence, ego-orientation, and physical activity boredom (P>0.05).

Using Pearson's correlation coefficient, correlation of self-efficacy and goal orientation with physical activity enjoyment subscales was determined.

Table 2. Correlation coefficient of the subscales of self-efficacy and goal orientation with physical activity enjoyment subscales

Variables	Physical activity enjoyment	Physical activity boredom
Perceived physical activity	0.36**	-0.34**
Physical self-presentation confidence	0.27**	-0.25**
Task orientation	0.55**	-0.32**
Ego-orientation	0.21**	-0.06

*P<0.05 **P<0.01

As seen from table 2, Pearson's correlation coefficient showed that perceived physical activity (r=0.36), physical self-presentation confidence (r=0.27), task-orientation (r=0.55) and ego-orientation (r=0.21) were positively and significantly correlated with physical activity enjoyment (P<0.05). Also, according to the results of table 2, the variables of perceived physical ability (r=-0.34), physical self-presentation confidence (r=-0.25) and task orientation were negatively and significantly correlated with physical activity boredom (P<0.05).

To determine the effect of each of variables of perceived physical ability, physical self-presentation confidence, task orientation and ego-orientation on physical activity enjoyment and physical activity boredom, multiple regression analysis was used (tables 3 and 4).

Table 3: Summarized results of multiple regression analysis for predicting physical activity enjoyment via self-efficacy and goal orientation variables

Predictor variable	Non-standard coefficients	Standard coefficients	t

	SE	B	Beta	
Perceived physical ability	0.045	0.199	0.170	4.47**
Physical self-presentation confidence	0.042	0.084	0.075	2.004*
Task-orientation	0.055	0.669	0.466	12.23*
Ego-orientation	0.066	0.045	0.024	0.677

R^2=0.34 R=0.58
*P<0.05 **P<0.01

According to the table's results (R^2=0.34, F=75.56, P<0.05), the model was significant and perceived physical activity and task orientation explain about 34 percent of physical activity enjoyment variance. As it is observed, given the value of beta, task orientation (0.46), perceived physical ability (0.17) and physical self-presentation confidence (0.07), in order mentioned, can predict changes pertaining to physical activity enjoyment.

Table 4: Summarized results of multiple regression analysis for predicting physical activity boredom through self-efficacy and goal orientation variables

Predictor variable	Non-standard coefficients		Standard coefficients	t
	SE	B	Beta	
Perceived physical ability	0.038	-0.201	-0.228	5.32**
Physical self-presentation confidence	0.036	-0.091	-0.107	2.55*
Task-orientation	0.046	-0.25	-0.239	5.47**
Ego-orientation	0.056	0.078	0.061	1.39

R^2=0.17 R=0.41
*P<0.05 **P<0.01

Results of the table (R^2=0.17, F=30.74, P<0.05) show significance of the model, with perceived physical ability, physical self-presentation confidence and ego-orientation explaining around 0.17 of physical activity boredom variance. As it is observed, considering the beta value, task orientation (-0.23), physical self-presentation (-0.10), and perceived physical ability (-0.22), in the order mentioned, can predict changes pertaining to physical activity boredom.

Discussion and conclusion:

The present study aims at determining the relationship between physical self-efficacy and goal orientation with physical activity enjoyment. Drawing upon obtained findings, significant difference was observed between girls and boys only in the subscale of physical activity enjoyment where that of boys was significantly higher. Perceived physical activity, physical self-presentation confidence, task orientation, and ego-orientation were positively and significantly correlated with physical activity enjoyment. Also,

variables of perceived physical ability, physical self-presentation confidence, and task orientation were negatively and significantly correlated with physical activity boredom. Task orientation made the highest contribution to predicting physical activity enjoyment and physical self-efficacy subscales had less impact than task orientation.

Based on the results, physical self-efficacy factor had a positive relationship with physical activity enjoyment. This result is consistent with work of Hu et al (2015). In study of Hu et al (2015), participants were randomly placed in two groups with low and high self-efficacy conditions and by getting involved in an average physical activity, they were provided a false feedback after an exercise test. Participants' physical self-efficacy was measured before and after performing the test. Hu et al (2015) concluded that manipulation of physical self-efficacy had significant impact physical activity enjoyment in Chinese adolescents (22 girls and 22 boys). People with low self-efficacy scored lower in physical activity enjoyment compared with high-self-efficacy group. Results of their study showed that self-efficacy can be an important effective variable in physical activity enjoyment in Chinese adolescents and thus, physical activity participation programs have to involve increasing physical self-efficacy. In the present study, after performing one course of physical activity in schools (between two academic semesters) students' self-efficacy was measured only once. Bauman et al (2012) suggested that self-efficacy is a significant determining factor in physical activity of children and adolescents. This was in agreement with findings of the present study. In the work of Bauman et al (2012) self-efficacy was compared generally along with factors of age, gender, health status and economic status. At this time, focus is on physical self-efficacy along with goal orientation factor. For cognitive variables are highly important and these variables undergo changes more than variables such as age, gender, and family income level (Husseini et al, 2013). Beth et al (2015) involved 448 adults with low activity in a physical activity improvement intervening program. Physical activity enjoyment and self-efficacy of these individuals were measured in the beginning of the program, after six months and after 12 months and results showed that enjoyment is a stronger predictor than self-efficacy, as self-efficacy is not a long-term predictor for physical activity and interventions must first be focused on increasing physical activity enjoyment. Given the results from present study, self-efficacy is an effective factor in physical activity enjoyment, and increasing self-efficacy of adolescents can reinforce enjoyment, which is a physical activity factor, and reduce physical activity-related problems among adolescents.

Using the theory of midlife women's attitudes toward physical activity (MAPA), Im E-O et al (2010) showed how tendency toward physical activity influences physical activity involvement. Results of study by these researchers revealed the relationship between physical self-efficacy and tendency toward physical activity in midlife women, significantly explaining physical activity of midlife women. These results are consistent with those of the present study. Given the variation of age group in these two studies, it could be predicted that self-efficacy is an effective factor in physical activity enjoyment in all ages. These researchers suggested that self-efficacy is the most relevant factor to tendency toward physical activity and a significant predictor for women's involvement in physical activity. Results of the present study showed that self-efficacy is correlated with physical activity enjoyment not only in women but also among men. Self-efficacy, in the study of Im E-O (2010) has been measured along with physical health and social factors, where self-efficacy has had the strongest effect. In the present study, focus was on psychological factors and therefore, task orientation was a stronger factor than self-efficacy for physical activity enjoyment. Sallis et al (1999) found that among boys of fourth to twelfth grades and seventh to

twelfth grade girls, enjoyment from physical education is related to physical activity-related factors such as self-efficacy, goal orientation, self-determination, goal orientation, task and perceived competency. This result can also be considered to conform to results of the present study. Resemblance of this study to the present work is in type of measured factors as well. Both studies have focused on psychological factors, addressing the positive relationship of self-efficacy, goal orientation, and physical activity enjoyment.

Results of this study showed positive relationship between goal orientation and physical activity enjoyment. Papaioannou and Theodorakis (1996) found that task orientation predicts intention of physical activity involvement. This result is in conformance with that of present study in connection with task orientation. On the other hand, Papaioannou and Theodorakis (1996) found that ego-orientation is a weak predictor for tendency of physical activity participation. This result is inconsistent with that of the present study. In current work, ego-orientation is significantly and positively related with physical activity enjoyment. Nicholls (1978) suggests that with beginning of youth an increase in the contribution of ego-orientation develops for predicting physical activity involvement. Considering the selected population in the present study that includes all three periods of youth, non-conformity of these two studies can be attributed to participants' age. Given the fact that in this study there have been individuals in adolescence age group, it appears that this is the reason for significance of the relationship between ego-orientation and physical activity enjoyment. Boyd and Yin (1996) suggested that adolescents' significant scores of physical activity enjoyment involve bigger perceived competency and increased years of activity involvement. This result also agrees with results of the present study.

Given the results of multiple regression analysis, task orientation was a stronger predictor than physical self-efficacy subscales for physical activity enjoyment. Im E-O (2010) considered that self-efficacy is a factor with most relevance to physical activity among such factors as social factors and physical health and a significant predictor for women's participation in physical activity. Work of Im E-O (2010), like that of Bauman et al (2012) has studied physical self-efficacy along with the factors of physical health and social status. Inconsistency of the results of that study with present study can be considered in difference of variables discussed, because in the present work, the variable of physical self-efficacy has been measured with a psychological variable and competition between psychological variables is addressed in the present study. Another cause of this disparity can be attributed to age group of these two studies. Participants of the work of Im E-O (2010) were middle-aged women, while participants of the present study were adolescents.

Finally, significance of model and predictability of task orientation, perceived physical ability and physical self-presentation confidence for physical activity enjoyment indicate the important impact of these psychological factors on physical activity improvement programs among adolescents. Given the significant difference of enjoyment subscale between boys and girls and boys' superiority over girls, and also considering the positive relationship between physical self-efficacy and goal orientation with physical activity enjoyment, physical activity enjoyment can be increased in girls by increasing the mentioned psychological factors and therefore, physical activity non-involvement of girls can be reduced. Bearing in mind the contrast of ego-orientation effect in the present study and former studies, it is suggested that this study be conducted in different groups of adolescents. Also, considering the important discourse of commitment to physical activity and continuance of physical activity in adulthood, studying this factor in a linear study is suggested.

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