

VALIDATION OF AN INSTRUMENT TO MEASURE IRANIAN STUDENT'S PHYSICAL SELF-EFFICACY IN FOOTBALL

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ABSTRACT

As physical abilities are necessary and required factors for performing skills and achieving success in sport, mental preparedness is also considered crucial. Athlete's and coach's efficacy have obvious effects on sports performance, in addition, it influences other individual and social setting dimensions for them. The present paper was aimed to validate the Persian version of Physical Self-Efficacy (PSE) measurement in Iranian football player students. 225 athletes with the age range of 12-14 were selected as the participants by sampling randomly and referring to Morgan's table. Cronbach's Alpha was used for measuring PSE reliability and confirmatory factor analysis was used for examining significant relationships between statements and variable and model fit. The results indicated goodness of PSE for measuring athlete student's self-efficacy in physical activity and its proper validity and reliability were reported. Finally, because of inaccessibility to female's community in the present paper, the same study is recommended to future researchers in other sports and girl's communities.

Keywords: *Physical Self-Efficacy, Students, Confirmatory Factor Analysis*

INTRODUCTION

As physical abilities are necessary and required factors for performing skills and achieving success in sport, mental preparedness is also considered crucial. There are athletes who have potential and actual talents and abilities, but when they enter into a specific competition or situation they cannot show their own efficiency and efficacy. Nowadays, athletes perceived not only the necessity of self-confidence but also sports teams shall believe on their own abilities for achieving goals and successes. The first self-efficacy requirement is to undertake great responsibilities affecting mutually each other. Athlete's and coach's efficacy have obvious effects on sports performance, in addition, it influences other individual and social setting dimensions for them. Self-efficacy is not defined as judgment about an individual's skills, but it is a kind of judgment about what person can do by those skills (Bandura, 1986) and one of the most basic factors influencing proper growth for performing sports skills (Manouchehri *et al.*, 2013). In other words, self-efficacy is defined as "judgment of what person can do by his/her abilities, not what he/she has done". This theory is created by a complex process of self-appraisal and self-persuasion (Bandura, 1997).

According to Bandura's theory, perceiving self-efficacy is belief on self abilities which is required for organizing and accomplishing some works toward determined goals and such beliefs are considered as the most important central mechanism (Dborah *et al.*, 1993). Performance is the most effective source of efficacy since it is based on personal mastery experiences (Erel, 2005). Mastery experiences affect self-efficacy beliefs through cognitive process. Person passing these experiences successfully his/her self-efficacy will be developed, and if these experiences accompany with failure and frustration, his/her self-efficacy will be decreased. Additionally, self-control or focus on success can make person more willing and it can increase self-efficacy further compared with self-control for failure (Dborah *et al.*, 1993). In other words, to what extent we just got our behaviors standards can determine our efficacy feeling. In Bandura idea, the mean of self-efficacy is competency and quality feelings and coping with life. Meeting and maintaining our performance standards will develop self-efficacy and failure of them can reduce it. Meanwhile, Bandura stated that individual's perceptions of their extent of control on life affects efficacy (Schultz and Schultz, 1991).

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Self-efficacy is influenced by mastery, capabilities demonstration, mental and physical preparation, physical self-presentation, social support, leadership and coaching, acting experiences, environmental comfort, and situational excellence in one side, and on the other side, factors like performance, succession, physical health, coping with stress and minimizing its consequences, mental health, improving motivation, boosting morale, and enjoyment are influenced by self-efficacy directly and indirectly.

Reviewing literature showed various approaches for studying self-efficacy. Marcos *et al.*, (2010) focused on player's efficacy and levels of team cohesion and collective efficacy among 76 pro-amateur football and basketball players. Tojari and Sharifi (2007) found that intrinsic motivation had direct and significant relationship with self-efficacy feeling for performing skills in elite wrestlers. Tojari (2000) reported significant relationship between self-efficacy feeling, wrestling skills performance, performance results, and competitive anxiety prior to competition. Dithurbide (2009) studied collective efficacy among 248 girl Volleyball players separated in 45 teams and the results indicated that there are significant relationship between collective efficacy and team's performances. Philippe and Busselut (2007) surveyed team efficacy and cohesion among 84 female athletes from 12 French high ranked Handball teams in the beginning of season, and the results suggested coaches to focus on team efficacy. Spink (1990) studied elite Volleyball players indicating more efficacy feeling leads to better performance in competition. Yukl (1998) emphasized on collective efficacy affecting player's performance, however, the results reported effect of coach's behavior and leadership style on collective efficacy.

Regarding the above literature, accomplishing each group work requires self-efficacy and believes on team's efficacy. In sport, especially team sports, prerequisite for achieving common goal is belief on self and team abilities like many groups and organizations and in this field, undoubtedly, coaches have a key role. From Francis and Young (1979) point of view, a team is beyond of people who wear the same uniforms. They believe that a team includes an active group of people who committed for attaining common goals, working properly with each other, and enjoying from that to get good results. So, self-efficacy and self-confidence are important in sport psychology and several factors influence efficacy and also it can be affected by age and physical readiness. Therefore, by the importance of the matter and lack of enough attention to student's efficacy in academic researches and also the necessity of validation of efficacy measurement scale among diverse age groups and sports, the present paper was aimed to validate the Persian version of Physical Self-Efficacy (PSE) measurement in Iranian football player students in order to be used in future researches.

MATERIALS AND METHODS

Participants

The statistical community included all male athlete students of Tehran Football schools. Referring to Morgan's Table and utilizing categorical random sampling, 225 athlete students with the age range of 12-14 (mean age=12.54 (0.76) years old were selected as the research statistical sample. The present research was conducted in 2 primary schools and 6 Football schools in Tehran. At the first, the required research process was coordinated with the department of education and school managers. The present researchers commenced to distribute the questionnaire among students after receiving permission from the head of Educational Organization and Football schools.

Measures

All measurements were translated from English to Persian (Farsi) and the statements were approved and confirmed by specialist for superficial reliabilities and validities. Additionally, all measurements were designed in way that the contents were understandable to respond for students with the 12-14 years old range.

Demographic Questionnaire: Including personal information such as age, and sport activity background.

Physical Self-Efficacy Questionnaire: PSE consists of 10 basic football techniques and participants selected a mark between 0 to 10 based on their own abilities and self-confidence for each technique. The

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self-efficacy total score for each participant was measured by mean of gained scores. Cronbach's Alpha Coefficient for this instrument was 0.90 in the present paper.

Statistical Methods

Descriptive statistics were used for describing and categorizing raw data (age, and sport activity background) and for measuring Mean, frequency, SD and table drawing. In order to measuring instruments consistency the Cronbach' Alpha was utilized. The Confirmatory Factor Analysis (CFA) was used for measuring the instrument validation, and for analyzing data the LISREL (19) was applied on 95% of confidence level.

RESULTS AND DISCUSSION

Descriptive Results

The results showed that the participant's mean age was 12.54 years and their mean year of background in sport was 3.18 (Table 1).

Table 1: Participant's characteristics

	Age	Background in Sport (year)
Mean	12.54	3.18
SD	0.76	1.7
Min	12	0
Max	14	8

The results also showed that the highest mean ($\bar{X} = 8.87$) belonged to side foot pass and the lowest mean ($\bar{X} = 7.34$) belonged to the knee control. It was also reported that the highest standard deviation (SD = 2.30) belonged to the knee control and the lowest standard deviation (SD = 1.86) belonged to side foot pass (Table 2).

Table 2: Descriptive statistics on self-efficacy statements

NO	Statement	Mean	SD
1	Side Foot Pass	8.87	1.86
2	Inside Foot Pass	7.84	2.06
3	Shoot	8.48	1.96
4	Sole Foot Control	8.48	1.87
5	Over Foot Control	7.69	2.14
6	The Knee Control	7.43	2.30
7	Breast Control	7.72	2.25
8	Dribbling (fooling opponent)	7.83	2.07
9	One and Two (passing to mate for traversing through an opponent)	8.07	2.17
10	Press	7.73	2.06

As it is shown on the Table 3, student's self-efficacy variable is in relatively good condition since its mean is higher than 8 regarding the Likert 10 points rate.

Table 3: Surveying enjoyment and its subscales

Variable	Abbreviation	SIG	T	Mean	SD	State
Self-efficacy	SE.ATH	0.00	9.70	8.01	1.57	Good

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Deductive Results

Confirmatory Factor Analysis (CFA) for Self-efficacy Variable

The results from Table 5 demonstrates measuring model of Physical Self-Efficacy in standard approximation base and it shows factor loads and significance coefficients for each statement, For instance, the first statement factor load is 0.76. In other words, the scale first statement explains about 58% of Physical Education Curriculum Enjoyment variance and the error rate is 0.42. The construct reliability will be convergent when all factor loads are more than 0.3. The model factor loads show the extent of each variable or statement influence on explaining main variable variance marks. In other words, the correlation extent of each observer variable (the statements) with latent variable (the factors) is shown by factor load. Additionally, the coefficients which are higher than +1.96 or lower than -1.96, indicate significant relationships. So, it can be realized by the results from Table 4 that all existed relationships (unilateral flashes which are simple regression equation) are significant relationship ($P < 0.05$). Moreover, model fit measurement indicated statistical indexes goodness. Regarding LISREL outcomes, X^2 (85.36) in proportion of DF (35) is less than 3. Other indexes, for instance, RMSEA, GFI, AGFI, and NFI were 0.08, 0.91, 0.85, and 0.93 respectively.

Table 5: The results of measuring model (physical self-efficacy)

			Factorial load	Error	Variance	Significance Coefficient
SE.ATH1	←	Self-Efficacy	0.76	0.42	0.58	13.09
SE.ATH2	←	Self-Efficacy	0.72	0.48	0.52	12.12
SE.ATH3	←	Self-Efficacy	0.72	0.48	0.52	12.16
SE.ATH4	←	Self-Efficacy	0.64	0.59	0.41	10.42
SE.ATH5	←	Self-Efficacy	0.72	0.48	0.52	12.21
SE.ATH6	←	Self-Efficacy	0.77	0.40	0.60	13.37
SE.ATH7	←	Self-Efficacy	0.75	0.44	0.56	12.87
SE.ATH8	←	Self-Efficacy	0.69	0.53	0.47	11.34
SE.ATH9	←	Self-Efficacy	0.76	0.42	0.58	13.07
SE.ATH10	←	Self-Efficacy	0.70	0.51	0.49	11.68

[SE.ATH= Physical Self-Efficacy Statement]

Discussion

Improving self-efficacy and feeling of control on present event for person's life is positively related to ability for coping with stress and minimizing its side effects on biological function. Successful performance in sport is also depended on psychological factors somewhat, although athletes must undoubtedly own related abilities for performing, some athletes have lower self-confidence for mastery performance, functional pressures endurance or consistency for tough effort. Therefore, athletes have perceived that not only what are the teammate's self-confidence in sensitive game situations but also have more general believe on ability for succession (Feltz, 2008).

The present paper by exploring validation of physical self-efficacy (PSE) questionnaire in student athlete's community reported instrument goodness for measuring students self-efficacy in physical activity and the present results were consisted with Marcos *et al.*, (2010), Lent *et al.*, (2009), Philippe and Bosselut (2007), Spink (1990), Yukl (1998), Shaffer and Wittes (2006) indicating desirable validation of the mentioned instrument in various groups and sports.

Conclusion

So, regarding the reviewed literature clarifying demographics are considered important in predicting self-efficacy, it is suggested to future researchers to validate physical self-efficacy questionnaire in different groups of sports, gender, ages. Due to inaccessibility to female community, as a limitation, and multitude of men that women in the present paper, the same study is recommended in female community in different sports.

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