

Validity and Reliability of Measurement Instrument for Sport Motivation Scale in Professional Athletes in Team Sports of Iran

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Abstract

Motivation represents one of the most important variables in sport. A large number of studies incorporating the SDT framework in the sport domain have confirmed that SDT is appropriate to understanding and promoting optimal motivation in sport. The purpose of this study was to determine the validity and reliability of sport motivation questionnaire. For selecting our sample we use available random sampling, so 200 participants were randomly selected for both male and female of professional athletes on the field of volleyball team, basketball, football, handball, futsal and then completed the questionnaires in a voluntary manner. Cronbach's alpha was used to calculate the reliability and confirmatory factor analysis test was used for studying the validity of the questionnaire. Findings showed that a Cronbach's alpha level for sport motivation was 0.80, which indicates the reliability of the variable is relatively good. And it should be mentioned that Sport motivation scale models used in society of professional athletes of Iranian team was relevant.

Keywords: Sport motivation; Professional athletes; Confirmatory factor analysis

Introduction

Regular play and practice of sport activities is associated with a number of positive outcomes, including increased fitness, increased vitality, increased self-esteem, and reduced serious illness [1,2]. Although most people to some extent are aware of the positive outcomes associated with sport activity, many people discontinue their sport participation every year [3]. Accordingly, a significant amount of research has been conducted on motivation in sport for the purpose of understanding why some athletes show an enduring desire to pursue their sport, whereas others quit or lose interest [4].

Motivation and its impact on behavior can be well expressed by self-determination theory which developed by Deci and Ryan [5]. Self-determination theory is a macro theory about human motivation that is associated with the development and function of personality in social contexts. The theory analyzes a behavior in which to what the extent human behavior is voluntary or autonomic behavior [5]. Motivation represents one of the most important variables in sport. In fact coaches and athletes agree that motivation is one of the key elements that will facilitate not only performance but also a positive experience in the sport area [6]. A large number of studies incorporating the SDT framework in the sport domain have confirmed that SDT is appropriate for understanding and promoting optimal motivation in sport [7].

Early sport motivation measurement instrument did not adequately measure all types of motivation as explained by SDT and/or presented weak factor structures [e.g. [8,9]]. The original authors of the Sport Motivation Scale (SMS; Pelletier et al.) progresses measurement in contextual sport motivation based on self-determination theory [5]. Since 1995, the SMS has been used extensively in sport motivation research. However, research has identified several limitations of the SMS -theoretically, empirically, and practically. We developed the SMS-6 in response to increase evidence that the SMS required revision, by including four items measuring integrated regulation, replacing of four problematic items, and constructing a composite intrinsic motivation subscale [6].

Mallett et al. [10] stated that sport motivation scale which had been developed earlier should be revised to include a criterion for measuring

integrated regulation. Because without this criterion, the scale does not reflect all existing structures within the frame work of self-determination theory. Mallett et al. also argued that some cases should be removed from the scale and subscale of intrinsic motivation should be combined in a single measuring criterion. Sport motivation scale have been used in some studies such as studies by [10-14] Kawabata and Mallett [15]. According to the growing interest in studies in the field of sport motivation, a valid measurement instrument is required. So the purpose of this study was determining the validity and reliability of measurement instrument of sport motivation in professional athletes in team sports of Iran.

Materials and Methods

Participants

The population of this research consist of all professional athletes in team sports (for both men and women) who have competed at least 5 years in volleyball, basketball, futsal, handball, football. The sample consisted of 200 participants who were randomly selected among available sports. They included 114 men and 86 women. The average of age and standard deviation for the men were 22.51 and 4 respectively and those indicators for the women were $\sqrt{23.31}$, 3.56 respectively that both of the groups completed questionnaires in voluntary manner.

Measurements instrument

Sport Motivation Scale developed by Mallett et al. [10] Motivation is an internal factor that stimulates individual's behavior and leads to a specific direction and coordinates it. Motivation is turning to specific

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activity and continued it; that may be a physical activity or mental-social activity that is measured by sport motivation scale with 7 item Like rt scale. This scale consists of 24 statements and six subscales that include:

A motivation

This means lack of purpose and intentionality in one's action.

External regulation

Which refers to doing actions for obtain rewards or avoid blame by others?

Introjected regulation

This refers to behaviors that are strengthened through internal pressures such as guilt or anxiety.

Identified regulation

That is when person emphasize on behavior and give worth to that behavior.

Integrated regulation

This represents the most independent form of extrinsic motivation that happens when there is heterogeneity between behavior rules and needs, goals and personal confirmed values which are part of the person.

Intrinsic motivation

This means engaging in an activity for itself and for the pleasure and satisfaction derived from participation. Four statements were used for each subscales and for responding to each statement, is used 7 item Like rt scale that range from: completely disagree with degree (1) and completely agrees with the degree (7). The English form of

the questionnaire of doping behavior was translated into Persian by specialist and then scale of validity was confirmed by experts in that field. In research by Mallett et al. [10] reliability of questionnaires by counting reliability of Cronbach's alpha coefficient was obtained up to 0.70 In this research Cronbach's alpha coefficient for sport motivation obtain 0.80.

Statistical methods

Statistical methods in this study were both descriptive and inferential statistics. Mean, standard deviation, and frequency tables for summarizing and classifying the raw data were used in descriptive and Cronbach's alpha was used in inferential statistics for calculating validity. Confirmatory factor analysis was used to test the validity of the questionnaire and SPSS software (version 16) was used for data analysis.

Results and Discussion

Results showed that 162 participants among the 200 participant-114 were male and 86 were female- believed that their success in future depends on the their success in sports but 38 women did not believe that their success in future depends on the their success in sports..

Table 1 show descriptive indicators such as mean and standard deviation for all question of sports motivation questionnaire. Findings in Table 1 indicate that Question 2 of intrinsic motivation subscale has highest mean (M=5.54) and Question 4 has the lowest mean (M=4.85). Also, Question 4 of intrinsic motivation subscales has highest standard deviation (SD=1.80) and its second question has the lowest SD (SD=1.57). Question 2 of introjected regulation subscales has the highest mean (M=5.19) and its third question has the lowest mean (M=4.26). Moreover question 3 of introjected regulation subscales has the largest SD (SD=1.90) and its second question has the lowest standard deviation (SD=1.59). Question 4 of identified regulation

Statements	distinctive	SD	Mean
For the excitement I feel when I am really involved in the activity.	IM 1	1.94	4.87
Because I feel a lot of personal satisfaction while mastering certain difficult training techniques	IM 2	1.57	5.54
For the satisfaction I experience while I am perfecting my abilities.	IM 3	1.60	4.94
For the pleasure of discovering new performance strategies	IM 4	1.80	4.85
Because it is absolutely necessary to do sports if one wants to be in shape	INR 1	1.75	5.10
Because I must do sports to feel good about myself	INR 2	1.59	5.19
Because I would feel bad if I was not taking time to do it	INR 3	1.90	4.26
Because I must do sports regularly	INR 4	1.83	4.30
Because it is a good way to learn lots of things which could be useful to me in other areas of my life	IDR 1	1.63	4.86
Because it is one of the best ways I have chosen to develop other aspects of my life.	IDR 2	1.46	4.90
Because it is one of the best ways to maintain good relationships with my friends.	IDR 3	1.79	4.87
Because training hard will improve my performance	IDR 4	1.57	5.25
Because it allows me to be well regarded by people that I know	ER 1	1.71	4.05
For the prestige of being an athlete	ER 2	1.93	3.95
For the material and/or social benefits of being an athlete	ER 3	2.07	4.11
To show others how good I am at my sport.	ER 4	1.85	4.21
Because it's part of the way in which I've chosen to live my life.	IR 1	1.88	4.45
Because it is an extension of me.	IR 2	1.72	5.01
Because participation in my sport is consistent with my deepest principles	IR 3	1.78	4.58
Because participation in my sport is an integral part of my life.	IR 4	1.71	4.97
I don't know anymore; I have the impression of being incapable of succeeding in this Sport.	AM 1	1.76	2.41
I don't know if I want to continue to invest my time and effort as much in my sport anymore	AM 2	1.61	2.72
It is not clear to me anymore; I don't really think my place is in sport.	AM 3	1.35	1.97
I don't seem to be enjoying my sport as much as I previously did	AM 4	1.69	2.31

Table 1: Describes the mean and standard deviation in questions of the sport motivation scale

subscales has highest mean (M=5.25) and its first question has the lowest mean (M=4.86) and question 3 of identified regulation subscales has the highest standard deviation (SD=1.79) and its second Question has the lowest standard deviation (SD=1.46). In addition, question 4 of external regulation subscale has highest mean (M=4.21) and its second question has the lowest mean (M=3.95) and Question 3 of external regulation sub scale has the highest standard deviation (SD=2.07) and its first question the lowest standard deviation (SD=1.71). The question 2 of integrated regulation subscale has the highest mean (M=5.01) and its first question has the lowest mean (M=4.45) and question 1 of integrated regulation subscale has the highest standard deviation (SD=1.88) and its fourth Question has the lowest standard deviation (SD=1.71). Question 2 of a motivation subscale has the highest mean (M=2.72) and its third question has the lowest mean (M=1.97). Also, question 1 of a motivation subscale has the highest standard deviation (SD=1.76) and its third question has the lowest standard deviation (SD=1.35).

Results of Table 2 show the Cronbach's alpha coefficients for the sport motivation variables. Table 3 shows Cronbach's alpha coefficients for dimension of sport motivation.

Table 4 shows measurement instrument of sport motivation

Variable	Sport motivation
α	0.805
Omitted Question	-
Final α	-

Table 2: Cronbach's alpha coefficients for the variables of study

Variable	Intrinsic Motivation	Integrated Regulation	Identified Regulation	External Regulation	Amotivation	Introjected Regulation
α	0.718	0.781	0.686	0.790	0.676	0.717
Omitted Question	1	-	-	-	4	-
Final α	0.732	-	-	-	0.752	-

Table 3: Cronbach's alpha coefficients for dimension of the sport motivation

		Factor load	Error	Significance Coefficient
Intrinsic Motivation	IM2	0.58	0.66	8.25
	IM3	0.79	0.38	12.12
	IM4	0.70	0.51	10.37
Integrated Regulation	IR1	0.66	0.57	9.79
	IR2	0.79	0.38	12.41
	IR3	0.59	0.65	8.55
	IR4	0.76	0.42	11.84
Identified Regulation	IDR1	0.67	0.55	10.18
	IDR2	0.62	0.62	9.16
	IDR3	0.50	0.75	7.22
	IDR4	0.58	0.67	8.46
External Regulation	ER1	0.66	0.57	9.43
	ER2	0.77	0.40	11.57
	ER3	0.68	0.54	9.76
	ER4	0.67	0.55	9.65
Amotivation	AM1	0.87	0.25	12.66
	AM2	0.63	0.60	8.91
	AM3	0.64	0.60	8.97
Introjected Regulation	INR1	0.53	0.72	7.07
	INR2	0.63	0.60	8.71
	INR3	0.68	0.54	9.52
	INR4	0.67	0.56	9.29

Table 4: The results of measurement model of sport motivation

AGFI	0.92
GFI	0.95
NFI	0.95
RMSEA	0.083

Table 5: Goodness of fit statistics of model

integrated regulation was obtained 0.65 rules, and other subscales were obtained above 0.70. In study by Barghi Moghaddam et al. [12] on 176 teenage soccer players, alpha for sport motivation variable obtained 0.71, respectively. In this study, the results of factor loading analysis indicated that all statements have been in order to assess the main variables. And in general, the validity and reliability of the scale was acceptable. The study by Kawabata et al. [15] which conducted with aims to reassess the factor structure of the Sport Motivation Scale with 24 statements over 437 participants; confirmatory factor analysis model compare to the sample data was not good enough. Through the evaluation of solving the exploratory structural equation modeling, it was found that two factors are loaded poorly on non-target parameters. Confirmatory factor analysis model which was modified by removing the two factors satisfactorily became acceptable for data of study and all 6 factors became different adequately.

Conclusions

According to this issue that motivation is indicator of one of the most important variables in sport and also, the measurement instrument of motivation did not measure, at first, all kinds of explained motivation in self-determination theory in adequate and qualified way; Or presents weak factor structures; Mallett et al. developed Sports Motivation Scale-6 in 2007. The aim of the present study has been determining Validity and reliability of the measurement instrument of sport motivation in professional athlete of team sport of Iran and according to the results, it seems that sport motivation scale has been a valid and reliable scale in assessing the scale of the sport motivation for athletes. Moreover, the sport motivation scale model which used in the society of professional athletes in Iranian team sport was appropriate and all statements of sports motivation scale were significantly related to the mentioned variable. The overall result of this study is the Persian form of the sport motivation scale is equivalent to the English form, and it covers the basic concepts. For the future researches, it is recommended to use other statistical methods such as retest method for determining their liability of used tools in present study and try to compare the results of both studies.

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