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Variance Analysis of Sport Motivation, Doping Attitude and Behavior among Pro Athletes of Team Sports

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ABSTRACT

Doping is accompanied by evident physical benefits. Sportsmen may refer to doping in order to improve their physical capabilities to win. Besides motivation are also recognized to be factors affecting doping behavior. In the present research the researcher in pursuing to answer the query of: do the variables of sport motivation, doping attitude and behavior have any significant relation with the diverse levels of the athletes level, age, sport field, education level, experience level and competing level? Male and female elite athletes in the team fields of volleyball, basketball, football, futsal and handball were chosen by random sampling method who filled the questionnaires of sport motivation scale-6 developed by mallet, et al., Performance Enhancement Attitude Scale (PEA); and Doping behavior Questionnaire voluntarily. Multiple variance analysis of ANOVA was used to measure difference between athletes doping attitude and motivation. The result showed that there is a significant difference between male and female athletes in doping attitude. Also, variables of sport motivation and doping behavior in different groups of athletes have significant difference based on separation of their professional situation and sport field.
KEY WORDS: Sport Motivation, doping attitude, doping behavior, Variance analysis

INTRODUCTION

The recent history of sporting events is marred with reports of athlete doping. Sports can provide instant fame, financial security, and respect, and these reasons are why athletes Use such risky methods, even at the risk of dying [1]. Doping gives clear physical advantages as explained above. Not only do they help improve Strength, speed, and endurance, but they can also aid in recovery from injury [2-4]. The advantages of being stronger or faster are very tempting for elite athletes. When extrinsic rewards such as prizes and money are the focus of competition, athletes may turn to doping to improve their physical prowess in order to win [5]. In one hand motivation are also known as factors that might affect doping behavior [6]. Laure summarized publications related to doping between the years 1980-1996 in 1997 and found out that motivation to use performance enhancing drugs can be categorized into two general groups. The first group deals with physiologic features for example as power enhancing, perseverance for confronting with fatigue or lack of instruction. Second group includes psychic-sociological features such as reaching to foreign goods, social expectations, pressure to win and personal trends.

Irving et al. [7] reported higher percentages of use of PED among young males as compared to females. Wroble, Gray, and Rodrigo [8] conducted a survey of 1553 preadolescent (10–14-year-old) athletes from 34 states and found a much lower anabolic steroid (AS) usage percentage among 10–14 year olds (0.9% male and 0.2% female). In an investigation by Stigler and Yesalis [9] that surveyed 873 Indiana high school football players, 6.3% admitted to using AS. Among adult athletes, in self-reported-use studies, doping prevalence has been estimated to be 5–15% [10]. Numerous studies have reported that an athlete's drug use in sport could be credited to a complex interaction of personal and environmental factors [9];[11];[12]. Possible contributing environmental factors include attitudes of peer groups, parents, coaches, accessibility to drugs, and cultural norms and values [13];[14]. Participants in Diacin, Parks & Allison [15] study supported athlete drug testing and identified factors that influenced their perceptions of the use of performance-enhancing substances. Their data showed that female athletes were more supportive of testing programs than males, testing by schools and the NCAA was supported but conference-wide testing programs were not, and finally that in general the athletes questioned were indifferent to drug testing [15]. A one-way ANOVA statistical test in Manouchehri and Tojari [16], Manouchehri and Tojari [17], Manouchehri, Tojari, and Ganjouei [18], Soltanabadi, Tojari, and Manouchehri [19], indicated statistical significant differences in participants' attitudes toward PEDs among the different groups of athletes competing in diverse levels.

In a study by Alaranta, et al [20], over 90% of the athletes thought sport performance can be improved by using banned substances. However, the vast majority of the athletes were not in favor of doping. Vajiala, et al.

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[21] considered to study the relation between motivation and temptation to use doping substances in high performance sports. The result showed a significant correlation between some kinds of motivation expressions of athlete's posture and temptations for using doping drugs. Barkoukis et al [22] found that there is a significant relationship between the different motivational profiles, the use of prohibited substances and intent in the future. Petroczi [23] showed a significant relation between attitude to doping and doping behavior. In the present study the researchers are going to survey: do sport motivation, attitude toward doping and doping behavior have any significant differences in diverse levels of gender, competition levels and type of athlete?

MATERIALS AND METHODS

Participants

The population of this research consisted of professional athletes in team sports (for both men and women) who had record of competition in Volleyball, Basketball, Futsal, Handball and Football at least for 5 years. The research sample consisted of 200 participants (114 men and 86 women) who were randomly selected among available sports. The average of age for men and women were 22.51 (4) and 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. [24]: Motivation is an internal factor that stimulates individual's behavior and leads to a specific direction and coordinates it. Motivation is turning to specific activity and continued it; that may be a physical activity or mental –social activity that is measured by sport motivation scale (9) with 7 item Likert scale. This scale consists of 24 statements and six subscales that include:

Amotivation: 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 that 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 7 item Likert scale for responding to each statement that range from: completely disagree with degree (1) and completely agrees with the degree (7). The English form of the questionnaire of Sport Motivation Scale was translated into Persian by specialist and then scale of validity was confirmed by experts in that field. In research by Mallett et al [24] 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.

Performance enhancement attitude scale [23]: doping attitudes defined as the willingness of a person to the use of banned performance-enhancing substances. This scale is to measure athlete's general attitudes to doping. The PEAS consists of 17 attitude statements measured on a six point Likert-type scale ranging from strongly disagree (1) to strongly agree (6). After translating the English version of performance enhancement attitude scale to the Persian, scale validity was confirmed by experts in this field. In study by Petroczi [23], Reliability and validity of scale with Cronbach's alpha was up to 0.70. In this study, Cronbach's alpha coefficient for the doping attitudes scale obtained 0.80 that after removal of statements 4, 8 and 9, this ratio increased to 0.82.

Doping Behavior Questionnaire [25]: the aim of Doping Behavior is a response from an athlete to an external action or action relating to doping. Doping behavior was measured by the two self-reported scale of "current use" and "previous experience of performance-enhancing substances". And the participants were asked to choose one of the options Yes (1), Yes but only for medical conditions (2), NO (3), tend to not answering (4). The first English version of the questionnaire of doping behavior was translated into Persian by specialist fluent in English and Persian and then scale validity was confirmed by experts in the field. In research which developed by Petroczi [25], Reliability and validity have been reported 0.94 in this study, Cronbach's alpha coefficient for the doping behavior scale obtain 0.81.

Statistical Methods

Descriptive statistics were applied for summarizing and categorizing row data and for measuring mean, SD, frequency tables and drawing graphs and tables. ANOVA was used for measuring difference between athletes' doping attitude and behavior and sport motivation. Tukey was used for means differences places. Independent (**t**) test was used for measuring attitude difference between men and women. Multivariate regression was used for predicting athletes' motivation and SPSS software (version 16) was used for data analysis.

RESULTS

The results showed that from 200 participating athletes, 114 individuals were male and 86 individuals were female. 118 individuals were semi pro, 47 individuals were pro and 35 individuals were amateur athletes. 162 individuals of athletes believed that their future depends on their sporting success and 38 other ones did not believe so.

The results showed that sport motivation have the highest mean (4.45) among pro athletes and the lowest mean (3.82) among amateur athletes. And doping behavior has the highest mean (0.70) among semi pro athletes and the lowest (0.25) among pro athletes. As it is seen in table one, sport motivation variable (F (2.197) =8.139, P=0) and doping behavior variable (F (2.197) =4.211, P=0.016) in diverse groups of athletes by separation of professional situation have signification difference. Therefore, it can be resulted that professional situation can predict sport motivation and doping behavior in team pro athletes.

Table 1: result of multi variance analysis for athletes professional situation

		Sum of Squares	df	Mean Square	F	Sig
Sport motivation	Between Groups	11.619	2	5.810	8.139	**0.000**
	Within Groups	140.615	197	8.9		
	Total	152.235	199			
Doping behavior	Between Groups	6.829	2	3.414	4.211	**0.016**
	Within Groups	159.726	197	0.811		
	Total	166.555	199			

With regard to table 2, Tukey test demonstrated that sport motivation variable among amateur and semi pro athletes (P= 0.001) and pro and amateur athletes (P=0.001) has significant difference. And doping behavior has significant difference between pro and semi pro athletes (P=0.012) so it can be realized that amateur athletes are various with semi pro and pro athletes in sport motivation and pro athletes are different from semi pro athletes in doping behavior variable.

Table 2: results of Tukey test for type of athletes

	(I) Q1	(J)Q1	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Sport motivation	Amateur	Pro-amateur	-.61063	.16261	.001	-.9947	**-.2266**
		professional	-.67886	.18863	.001	-1.1243	**-.2334**
Doping behavior	professional	Amateur	-.37325	.20104	.154	-.8480	**.1015**
		Pro-amateur	-.44807	.15531	.012	-.8149	**-.0813**

Also, results showed that sport motivation has the highest mean (4.79) among basketball players and the lowest mean (4.03) among football players. Doping attitude has the highest mean (3.04) among basketball players are the lowest mean (2.42) among volleyball players. And doping behavior has the highest mean (0.90) among basketball players and the lowest mean (0.34) among volleyball players. With regard to table 3 doping attitude (F (4.195) =3.907, P=0.004) and sport motivation (F (4.195) =4.521, P=0.002) variables and doping behavior (F (4.195) =2.718, P=0.031) variable in diverse groups of athletes by separation of sport field have significant difference. As a result, diverse sport fields of athletes can predict attitude toward doping, sport motivation and doping behavior among team professional athletes.

Table 3: the results of multi variance analysis for diverse groups of athletes

		Sum of Squares	df	Mean Square	F	Sig.
Sport motivation	Between Groups	12.920	4	3.230	4.521	**0.002**
	Within Groups	139.315	195	0.714		
	Total	152.235	199			
Doping attitude	Between Groups	10.436	4	2.609	3.907	**0.004**
	Within Groups	130.223	195	0.668		
	Total	140.659	199			
Doping behavior	Between Groups	8.797	4	2.199	2.718	**0.031**
	Within Groups	157.758	195	0.809		
	Total	166.555	199			

By the results of Table 4 it is observed that sport motivation among football and basketball players (P=0.001) and handball players and basketball players (P=0.58) has significant difference. In addition attitude toward doping among volleyball and basketball players (p=0.002) and footballers and basketball players (p=0.022) has significant difference. Finally there is a significant difference among volleyball and basketball players (p=0.021) in doping behavior. So the result can be drown that football, basketball and handball players

are various in comparison with other sport fields in sport motivation variable. In addition in comparison with other sport fields, volleyball basketball and football players are various in doping attitude variable. And volleyball players and basketball players are different from other sport fields in doping behavior.

Table 4: the results of Tukey test for diverse sport group of athletes.

	(I)	(J)	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	**Upper Bound**
Sport motivation	basketball	Football	0.71183	0.17500	0.001	0.2300	**1.1937**
		handball	0.52339	0.19398	0.58	-0.107	**1.0575**
Doping attitude	basketball	Football	0.51489	0.16919	0.022	0.0490	**0.9807**
		volleyball	0.62444	0.16635	0.002	0.1664	**1.0825**
Doping behavior	basketball	volleyball	0.56152	0.18309	0.021	0.574	**1.0657**

The results also showed sport motivation has the highest mean (4.38) among Asian athletes and the lowest mean (4.23) among international athletes. The variable of doping attitude has the highest mean (2.65) among national athletes and lowest mean (1.35) among international athletes and doping behavior variable has the highest mean (0.59) in national athletes and the lowest (0.00) in international athletes. The research result showed the variable of doping attitude (F (2.196) = 1.303, P=0.274) and sport motivation variable (F (2.197) =0.149, P=0.861) and the variable of doping behavior (F (2.197) =0.289, P=0.749) in different groups of athletes by separation of level of competing do not have any significant difference. Consequently level of competing cannot predict the variables of sport motivation doping attitude and doping behavior.

Based on table 5and t-test of two independent variables it can be said that just the variable of doping attitude has a significant difference between male and female athletes and variables of sport motivation and doping behavior does not have a significant difference between male and female athletes.

Table 5: results of variance analysis test by separation of gender situation.

Variable	Sport motivation	Doping attitude	Doping behavior
(Sig)	0.076	0.001	**0.195**

DISCUSSION AND CONCLUSION

Among adult athletes, in self-reported-use studies, doping prevalence has been estimated to be 5–15% [4]. Numerous studies have reported that an athlete's drug use in sport could be credited to a complex interaction of personal and environmental factors [9];[11];[12]. The present results corresponding with the findings of Bloodworth, et al. [26], Soltanabadi, Tojari and Manouchehri [19], and Laure [10] represented that doping attitude has a significant difference in male and female athletes while variables of sport motivation and doping behavior don't have significant difference between male and female athletes. Also any significant difference was not observed between male and female athletes in variables of doping attitude and behavior in research of Petróczi, Aidman and Nepusz [27], Petróczi [23], Manouchehri, Tojari and Ganjouei [17], Manouchehri and Tojari [16], and Manouchehri and Tojari [18] and corresponding with the results from Atkinson [28] the present results showed that there is not a significant difference among the variables of research in diverse groups of athletes by separation of competing levels. Furthermore, in contrast with the finding of Manouchehri, Tojari and Ganjouei [17] results of this study demonstrated that sport motivation variable and doping behavior variable in different groups of athletes by their professional situation have significant difference, corresponding with findings of Manouchehri and Tojari [18] indicating a significant difference in doping behavior in difference sport groups it was showed that variables of doping attitudes , sport motivation and doping behavior in different groups of athletes based on sport field have a significant difference. It is recommended to future researchers to investigate the relation of these variables for international athletes and other team sport fields.

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