The Comparison of Amateur Male and Female Chess Players' Mental Skills in Iran

Majid Keramati Moghadam[1*], Masoumeh Noredini[2] and Seyed Navid Hojaji[3]

1- 1.M.Sc in Sport Psychology, Islamic Azad University Karaj Branch, Iran
2- 2.M.Sc in Motor Behaviour, Allameh Tabatabaei University, Tehran, Iran
3- 3.B.sc in Statistics, Adiban University, Garmsar, Iran

Corresponding author: Majid Keramati Moghadam

ABSTRACT: The purpose of this study was to compare the amateur male and female chess players' mental skills in Iran. The statistical population of this study was all amateur male and female chess players in Iran. 160 male (n=99) and female (N=61) chess players were selected as a statistical sample through stratified sampling. The instrument for collecting of data is included the Ottawa Mental Skills assessment Tool (OMSAT-3) under three broader conceptual components: foundation, psychosomatic, and cognitive skills. The collected data were classified by descriptive statistical methods and were analyzed by MANOVA (P≤0.05). the results of study show that there is no significant difference in none of the components of foundation, psychological, and cognitive skills between amateur male and female chess players. Therefore, it seems that the gender factor has no decisive role in amateur female and male chess players, mental skill. We can conclude that there is no significant difference between amateur female and male chess players in mental skills because there is not a physiological difference between them in chess sport and the power and endurance are not played role in this sport.

Keywords: Mental skills, chess, amateur players.

INTRODUCTION

Human's mental abilities create his power adapted in dealing with environment these mental abilities can be a determining factor in human, s adaptation. Therefore, it is clear that human's mental abilities are related to adaptive behaviors (Afruz, 2008). Today, experts don not consider only cognitive characteristics in the mental retardation but they consider the adaptive behavior as a further criterion (Afruz, 2008). Mental skills means a set of states, abilities (such as: mental imagery), and planning (such as: goal-setting) that they improve athlete's performance in addition to increasing of psychological well-being. Mental skills are learned and they are improved through practice (Vaez Mousavi, 2000). This issue that skilled level of chess is required special knowledge is in widespread agreement but there are disagreements about the importance of individual' s general characteristics in the adjustment of obtained performance level and the acquisition of expertise (Torabi, 2005). The finding of an accessible and usable method can be very important. This method should be able to help the improving of cognitive processes. In this regard, using of chess that it is associated with strategic thinking and problem solving has been studied and some have suggested that chess can have positive effects on different cognitive aspects (Sadigh, et al., 2010). Torabi (2005) examined the comparison of male and female student athletes' mental skills in individual and team sports of teacher training institutions in Iran. 227 people (102 male players and 135 female players) were selected as statistical sample in Torabi, s study and they complete the (SASI) questionnaire (Torabi, 2005). The results of this study showed that male and female athletes, mental skills in individual and team sports are evaluated in a good level (Torabi, 2005). Noorbakhsh and Maleki (2005) studied the comparison of male elite athletes, foundation, psychosomatic, and cognitive mental skills in individual and team sports and the relationship of these skills with their self-efficacy in of Khuzestan province. 100 team athletes and 10 individual athletes of Khuzestan province were selected as subjects and the Ottawa Mental Skills Assessment Tool (OMSAT-3) was used in this study as the instrument for collecting data. The results showed that there is no significant difference in all skills athletes, mental skills in individual and

team sports (Noorbakhsh and Maleki 2005). Also, there is no significant difference between athletes in each of 12 mental skills (the components of three part: basic, physical – psychological, and cognitive) (Noorbakhsh and Maleki 2005). Gadiri (2005) examined the profile of mental skills in elite and non-elite male karate players in Premier League of Iran. 50 karate players who had national, Asian, and world champion were selected as elite group and 20 karate players who had not these conditions were selected as non-elite group. Winter and Martin, questionnaire that is included 60 questions was used for collecting data in this study. Gadiri examined 6 mental skills: motivation, concentration, and self-confidence, adjustment of mental energy level, imagery, and goal setting in two groups (Gadiri, 2005). He reported that mental skills are significantly higher in elite karate players than no-elite karate players. This superiority was significant in the motivation, concentration, self-confidence, imagery, and goal setting skills but there is no significant difference between elite and non-elite karate players in the skill of adjustment of mental energy level (Gadiri, 2005). Sharif far (2008) studied the relationship between male and female, s physical fitness and mental skills in Iran national squash team. The subjects perform the practical tests of Olympic Academy and the Ottawa Mental Skills Assessment Tool (OMSAT-3) was used in this study as the instrument for collecting data (Sharif far, 2008). The survey of mental profile between male and female groups showed that males had higher scores than females in refreshments, mental training, and reaction to stress skill but females had higher scores than males in relaxation, commitment, and planning competition skill (Sharif far, 2008). Overall, there is no significant difference between gender and each of research variables (Sharif far, 2008). Pashabadi, et al (2011) studied the comparison of elite and non-elite male and female volleyball players, mental skills. The statistical sample of this study was 104 Iranian players in Premier volleyball League (20 male players and 30 female players) and college competitions (30 male players and 24 female players) and they complete the Ottawa Mental Skills Assessment Tool (OMSAT-3) questionnaire (Pashabadi, et al., 2011). The elite players had higher self-confidence than non-elite players and elite players had smoother and better skills than non-elite players. But there is no significant difference between male and female players (Pashabadi, et al., 2011). Charanjit and Jaspal (2014) evaluated an analysis of mental skills between high and low performing volleyball players of schools, colleges, and clubs. The total two hundred and forty (N=240) volleyball players was taken as subjects to analyze the mental skills. Mental skills questionnaire prepared by Hardy and Nelson (1996) was administered to record the response of school, college, and club level volleyball players (Charanjit and Jaspal, 2014). The results of this study showed that there is a significant difference between high and low performing volleyball players and high level athletes had higher mental skills than low level athletes (Charanjit and Jaspal, 2014). So the researchers want to know in this study whether there is a difference between amateur male and female chess players' mental skills in Iran or not.

MATERIALS AND METHODS

Method
The method of this study was casual-comparative.

Participants
The statistical population of this study was all amateur male and female chess players in Iran. 160 chess players (N $_{male\ players}$ = 99 and N $_{female\ players}$= 61) were selected by stratified sampling for this study.

Instruments and Tasks
The instrument was the Ottawa Mental Skills Assessment Tool (OMSAT-3): the first part of his questionnaire was included the questions about athletes' individual characteristics on age, gender, level of education, field of study, history of chess activities. The second part of the questionnaire was included the questions about mental skills using the Ottawa Mental Skills Assessment Tool (OMSAT-3). This questionnaire especially was made to measure the fitness of champion athletes that it was made by Salma, Barbour, Cox, Gowlett, Imaj, and Ping in 1993 and was validated by Salma and Botha in 1993 (Vaez Mousavi, 2000). The Ottawa Mental Skills Assessment Tool (OMSAT-3) is included 48 questions and it is assessed three categories of mental skills and 12 subscales. These three categories are included a) foundation mental skills (1.goal-setting 2.self-confidence 3.Commitment), b) psychosomatic skills (1.reaction to stress 2.control of fear 3.refreshment 4.relaxation), and c) cognitive skills (1.concentration 2.refocusing 3.mental imagery 4.mental training 5.planning completion). It was scored for reaction to stress, control of fear, refreshment, and relaxation with words never=1, rarely=2, sometimes=3, often=4, always=5 and for goal-setting, self-confidence, and Commitment and concentration, refocusing, mental imagery , mental training, and planning completion with words never=5, rarely=4, sometimes=3, often=4, always=1. The reliability of questionnaire was calculated according to the Cronbach's alpha r=0.92 and from Guttman method r=0.88 in Maleki's thesis (2005) and p=0.05 (Maleki, 2005). Sanati Monfared (2006) examined the reliability and validity of this

questionnaire on adult athletes who was member in national team or sports club that they had participated in training camp for dispatched to Qatar Doha competitions (2006). He determined that some of questions had low validity coefficient (Sanati Monfared, 2006). So, third version of The Ottawa Mental Skills Assessment Tool (OMSAT-3) was adjusted by necessary changes.

Procedure

The researcher distributed the questionnaires among the subjects. The researcher explain the goal of study to subjects before completing of the questionnaires .The subjects complete the questionnaires without name due to the subjects' security sense. The questionnaires were collected after 30 minutes.

Data Analysis

The collected data were classified by descriptive statistical methods and were analyzed by Multivariate Analysis of Variance (MANOVA). The SPSS software (version 19) was used for data analysis ($\alpha \leq 0.05$).

RESULTS AND DISCUSSION

Results

The results of table (1) show that the mean of goal-settings, self-confidence, and commitment is respectively 2.47±0.68, 2.11±0.74, and 2.56±0.78 in amateur female chess players and 2.55±0.74, 2.09±0.67, and 2.54±0.72 in amateur male chess players.

Table1. The description of foundation mental skills (goal-settings, self-confidence, and commitment) of amateur male and female chess players

Gender		Goal-setting	Self-confidence	Commitment
Female	Mean	2.4713	2.1516	2.5697
	N	61	61	61
	Std. Deviation	.68175	.74061	.78678
Male	Mean	2.5581	2.0934	2.5404
	N	99	99	99
	Std. Deviation	.74216	.67630	.72290
Total	Mean	2.5250	2.1156	2.5516
	N	160	160	160
	Std. Deviation	.71880	.69978	.74558

The results of table (2) show that the mean of reaction to stress, relaxation, control of fear, and refreshment is respectively 2.57±0.73, 2.81±0.73, 2.06±0.59, and 2.74±0.61 in amateur female chess players and 2.59±0.76, 2.56±0.71, 2.15±0.82, and 2.54± 0.60in amateur male chess players.

Table 2. The description of psychosomatic skills (goal-settings, self-confidence, and commitment) of amateur male and female chess players

Gender		Reaction to stress	Relaxation	Control of fear	Refreshment
Female	Mean	2.5738	2.8115	2.0615	2.7459
	N	61	61	61	61
	Std. Deviation	.73788	.73408	.59100	.61151
Male	Mean	2.5934	2.5682	2.1515	2.5455
	N	99	99	99	99
	Std. Deviation	.76146	.71323	.82671	.60331
Total	Mean	2.5859	2.6609	2.1172	2.6219
	N	160	160	160	160
	Std. Deviation	.75029	.72865	.74496	.61236

The results of table (3) show that the mean of reaction to concentration, refocusing, mental imagery, mental training, and planning completion is respectively 2.27±0.58, 2.52±0.59, 2.65±0.67, 2.75±0.70, and 2.69±0.81 in amateur female chess players and 2.43±0.79, 2.85±0.64, 2.60±0.67, 2.78± 0.73, and 2.74±0.78in amateur male chess players.

Table 3. The description of cognitive skills (concentration, refocusing, mental imagery, mental training, and planning completion) of amateur male and female chess players

Gender		Concentration	Refocusing	Imagery Mental	Mental Training	Planning Competition
Female	Mean	2.2787	2.5246	2.6598	2.7500	2.6967
	N	61	61	61	61	61
	Std. Deviation	.58825	.59983	.67859	.70858	.81409
Male	Mean	2.4318	2.8510	2.6086	2.7828	2.7475
	N	99	99	99	99	99
	Std. Deviation	.79284	.64575	.67590	.73249	.78205
Total	Mean	2.3734	2.7266	2.6281	2.7703	2.7281
	N	160	160	160	160	160
	Std. Deviation	.72359	.64659	.67525	.72140	.79225

The results of table (4) show that the mean of foundation, psychosomatic and cognitive skills is respectively 2.39±0.61, 2.54±0.41, and 2.58±0.46 in amateur female chess players and 2.39±0.57, 2.46±0.51, and 2.68±0.44 in amateur male chess players.

Table 4. The description of foundation, psychosomatic and cognitive skills of amateur male and female chess players

Gender		Foundation Skills	Psychosomatic Skills	Cognitive Skills
Female	Mean	2.3975	2.5482	2.5820
	N	61	61	61
	Std. Deviation	.61415	.41259	.46197
Male	Mean	2.3973	2.4646	2.6843
	N	99	99	99
	Std. Deviation	.57104	.51779	.44799
Total	Mean	2.3974	2.4965	2.6453
	N	160	160	160
	Std. Deviation	.58593	.48077	.45467

Multivariate Analysis of Variance (MANOVA) was used to determine that is there a significant difference between independent groups in more than on continues dependent variable in this study or not.

Table 5. The results of Multivariate Analysis of Variance for determining of difference between foundation mental skills in amateur male and female chess players

	Value	F	Hypothesis df	Error df	Sig.
Wilks' Lambda	.154	1.415	5.000	332.000	.359

According to table (5), there is no significant difference between amateur male and female chess players in foundation mental skills (P=0.359).

Table 6. The results of Multivariate Analysis of Variance for determining of difference between psychosomatic skills in amateur male and female chess players

	Value	F	Hypothesis df	Error df	Sig.
Wilks' Lambda	.219	1.015	4.000	411.000	.130

According to table (6), there is no significant difference between amateur male and female chess players in psychosomatic skills (P=0.130).

Tabe 7. The results of Multivariate Analysis of Variance for determining of difference between cognitive skills in amateur male and female chess players

	Value	F	Hypothesis df	Error df	Sig.
Wilks' Lambda	.121	1.001	5.000	465.000	.123

According to table (7), there is no significant difference between amateur male and female chess players in cognitive skills (P=0.123).

Table 8. The results of Multivariate Analysis of Variance for determining of difference mental skills in amateur male and female chess players

	Value	F	Hypothesis df	Error df	Sig.
Wilks' Lambda	.214	1.453	5.000	710.000	.122

According to table (8), there is no significant difference between amateur male and female chess players in all mental skills (P=0.123).

Discussion and Conclusion

The results of this study showed that there is no significant difference between amateur male and female chess players' mental skills in Iran. This result is consistent with Noorbakhsh and Maleki (2005); Sharifi Far (2008); and Pashabadi, et al's (2011) study that the results of Noorbakhsh and Maleki's (2005) study showed that there is no significant difference in all skills athletes' mental skills in individual and team sports (Noorbakhsh and Maleki, 2005). Also, there is no significant difference between athletes in each of 12 mental skills (the components of three part: basic, physical – psychological, and cognitive) (Noorbakhsh and Maleki, 2005) and the results of Shari Far's (2008) study showed that there is no significant difference between gender and each of research variables (Shari Far, 2008). Also, the results of Pashabadi, et al's (2011) study showed that there is no significant difference between male and female players (Pashabadi, et al., 2011). This result is conflict with Torabi (2005); Gadiri (2005); and Charanjit and Jaspal's (2014) study that he results of Torabi's (2005) study showed that male and female athletes, mental skills in individual and team sports are evaluated in a good level (Torabi, 2005). Gadiri reported that mental skills are significantly higher in elite karate players than no-elite karate players. This superiority was significant in the motivation, concentration, self-confidence, imagery, and goal setting skills but there is no significant difference between elite and non-elite karate players in the skill of adjustment of mental energy level (Gadiri, 2006). The results of Charanjit and Jaspal's (2014) study showed that there is a significant difference between high and low performing volleyball players and high level athletes had higher mental skills than low level athletes (Charanjit and Jaspal, 2014). In addition to socio-cultural factors, the female' biological and physiological difference than male can be a proper justification for the results of this study. Males have testosterone hormone and higher strength, endurance, and physiologic power than females that these are caused that males have high mental toughness and endurance psychologically (Crust and Clough, 2005; Gould, et al., 2002). The testosterone hormone, endurance, and power are not played role in chess sport. Perhaps, it is not observed a difference between male and female in chess sport due to these physiological differences is not used in this sport. So there is not expected that is observed difference between male and female. Of course, we have not evaluated the mental toughness in this study. If we did that it we might obtain a significant result. We can conclude that there is no significant difference between male and female in mental skills because there is not a physiological difference between them in chess sport and the power and endurance are not played role in this sport.

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