

The comparison of elite, blind, and amateur male and female chess players' mental skills in Iran

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ABSTRACT

The purpose of this study was the comparison of elite, blind, and amateur male and female chess players' mental skills in Iran. The statistical population of this study was all elite, blind, and amateur male and female chess players of Iran. 478 male and female chess players were selected as statistical sample by stratified sampling ($N_{elite\ female} = 32$, $N_{blind\ female} = 34$, $N_{elite\ male} = 228$, $N_{blind\ male} = 24$, $N_{amateur\ male} = 99$). The instrument of measurement was 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 ANOVA ($P \leq 0.05$). The results of this study shows that there is a significant difference between elite, blind, amateur male and female chess players of Iran in the self-confidence, commitment, and mental training components of mental skills but there is no significant difference between elite, blind, amateur male and female chess players of Iran in other components of mental skills.

Keywords: Mental skills, chess, elite players, blind players, amateur players

INTRODUCTION

Today, the athletes should have good conditions in psychological aspects alongside their regular, serious, and advanced exercises in order to achieve greater success. The athletes who apply mental skills can improve their focus and they have high self-confidence [1]. Also they will increase their mental efficiency and these athletes will have less false excitement so they will be more successful in their sports performance [1]. The successful athletes have higher positive thinking and better decision making than other athletes [1]. Mental skills are the inherent or learned characteristics that can create athlete's success or increase the possibility of athlete's success. The self-confidence, control of concentration, anxiety, and control of arousal are samples of mental skills. Everybody can learn and practice these skills and he/she can improve his/her performance by the achieving to mental fitness. The training of mental skills is included continuous training of psychological or mental skills that those were performed to improve sports performance and to increase satisfaction in sport and physical activity [2]. Blindness has not borders and it is affected people regardless of their age, gender, nationality, religion, race, socio-economic class [3]. Most of people believe that blind people are needy and in difficulties and deserving of pity and they face with frustrations [3]. Chess is two-player memory played on chessboard with 64 squares (black and white colors), both opponents has 16 pawns that they can move one of their pawns in turn [4]. Chess ends with the victory of one of the players or equality [5]. Mental game plays an important role in chess. Even we can say that mental factor is as important as chess players' technical skills in high levels such as the world champions. These mental issues were considered tricks in the past but today those are considered an important part of the weapons that every prominent chess players should achieve them. [6]. Torabi (2005) examined the comparison of male and female student athletes, mental skills in individual and team sports of teacher training institutions in Iran [7]. 227 people (102 male players and 135 female players) were selected as statistical sample in Torabi's study and they complete the (SASI) questionnaire. The results of this

study showed that male and female athletes' mental skills in individual and team sports are evaluated in a good level [7]. Sharif far (2008) studied the relationship between male and female, s physical fitness and mental skills in Iran national squash team [8]. 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. 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 [8]. Overall, there is no significant difference between gender and each of research variables [8]. Sotoudeh, *et al* (2012) compared the elite and non-elite taekwondo players' mental skills [9]. 142 male and female taekwondo players 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 of this study showed that the elite taekwondo players were better than non-elite taekwondo players in the relaxation, goal-setting, self-confidence, commitment, and planning competition [9]. Also, the non-elite taekwondo players were better than elite taekwondo players in the concentration and reaction to stress components [9]. Riahifarsani, *et al* (2013) surveyed the effects of emotional intelligence on mental skills in adolescent athletes [10]. 80 male and female students were selected as subjects (N_{female} = 40, N_{male} = 40). 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 between emotional intelligence and mental skills [10]. Salmela *et al* (2009) examine mental skill profiles and expertise levels of elite Iranian athletes [11]. The Ottawa Mental Skills Assessment Tool (OMSAT-3) was used in this study as the instrument for collecting data. Six months prior to the 15th Asian Games in Doha, the Persian version of the OMSAT-3 was administered to 208 Iranian athletes, 110 of whom were selected for the Games in 15 different sports. An overall ANOVA revealed that the selected athletes reported higher mental skill scores. Post-hoc analyses revealed that stress reactions and refocusing skills separated the selected and non-selected athletes at (p < 0.05). Then, 38 medal winners and 30 non-medalists were compared. The results showed that there was only a significant difference between these two groups in the control of stress component [11]. Domonikus, *et al* (2009) evaluated the relationship between mental skills and anxiety in hokey athletes [12]. The Ottawa Mental Skills Assessment Tool (OMSAT-3) was used in this study as the instrument for collecting data. 108 male and female hokey players were selected as subjects (N_{female} = 54, N_{male} = 54). They expressed that the difference between male and female is related to the severity of anxiety and self-confidence [12]. Eloff, *et al* (2011) evaluated the instruction of mental skills in hokey athletes in South Africa [13]. The Ottawa Mental Skills Assessment Tool (OMSAT-3) was used in this study as the instrument for collecting data. 197 male and female athletes were selected as subjects (N_{female} = 106, N_{male} = 91). They stated that women are better than men in goal-setting, self-talk, and commitment while men were better than women in response to stress [13]. Charanjit and Jaspal (2014) evaluated an analysis of mental skills between high and low performing volleyball players of schools, colleges, and clubs [14]. 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 [14]. 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 [14]. Therefore, the researchers want to know in this study whether there is a difference between blind male and female chess players' mental skills in this study or not.

MATERIALS AND METHODS

Method

The method of this study was casual-comparative.

Participants

The statistical population of this study was all elite, blind, and amateur male and female chess players in Iran. 478 male and female chess players were selected as statistical sample by stratified sampling stratified sampling (N_{elitefemale} = 32, N_{blind female} = 34, N_{amateur female} = 61, N_{elitemale} = 228, N_{blind male} = 24, N_{amateur male} = 99).

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) [2]. 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' thesis (2005) and $p=0.05$ [15]. 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 [16]. 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 explains 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 ANOVA. The SPSS software (version 19) was used for data analysis ($\alpha \leq 0.05$).

RESULTS

The results of table (1) show that the mean and standard deviation of all components of mental skills in amateur, elite, and blind chess players.

ANOVA was used to determine whether there is a significant difference between independent groups in more than one continues dependent variable in this study or not.

According to the table (2), there is no significant difference between amateur, elite, and blind chess players in the goal-setting ($\text{sig}=0.77$), reaction to stress ($\text{sig}=0.086$), relaxation ($\text{sig}=0.590$), control of fear ($\text{sig}=0.831$), refreshment ($\text{sig}=0.848$), concentration ($\text{sig}=0.398$), refocusing ($\text{sig}=0.857$), mental imagery ($\text{sig}=0.959$), and planning competition ($\text{sig}=0.074$) components. Also, there is a significant difference between amateur, elite, and blind chess players in the self-confidence ($\text{sig}=0.044$), commitment ($\text{sig}=0.001$), and mental training ($\text{sig}=0.002$) components.

Table1. the mean and standard deviation of all components of mental skills in amateur, elite, and blind chess players													
		Goal-setting	Self-confidence	Commitment	Reaction to stress	Relaxation	Control of fear	Refreshment	Concentration	Refocusing	Imagery Mental	Mental Training	Planning Competition
Amateur	N	160	160	160	160	160	160	160	160	160	160	160	160
	Mean	2.5250	2.1156	2.5516	2.5859	2.6609	2.1172	2.6219	2.3734	2.7266	2.6281	2.7703	2.7281
	Std. Deviation	.71880	.69978	.74558	.75029	.72865	.74496	.61236	.72359	.64659	.67525	.72140	.79225
	Median	2.5000	2.1250	2.5000	2.5000	2.7500	2.0000	2.5000	2.2500	2.7500	2.7500	2.7500	2.7500
	Minimum	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.25	1.25	1.00
	Maximum	4.75	3.75	4.75	4.25	4.50	4.25	4.25	4.50	4.25	4.25	4.50	5.00
Elite	N	285	285	285	285	285	285	285	285	285	285	285	285
	Mean	2.4281	2.0088	2.3298	2.4623	2.7175	2.0711	2.6570	2.3632	2.6921	2.6307	2.7632	2.7149
	Std. Deviation	.85431	.76102	.84804	.79175	.84417	.83524	.69527	.82551	.78480	.72510	.84261	.83976
	Median	2.5000	2.0000	2.2500	2.2500	2.7500	1.7500	2.7500	2.2500	2.5000	2.5000	2.7500	2.7500
	Minimum	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Maximum	4.75	4.00	4.75	4.75	5.00	4.50	4.75	5.00	4.75	4.75	5.00	5.00
Blind	N	60	60	60	60	60	60	60	60	60	60	60	60
	Mean	2.6750	2.2542	2.7750	2.3458	2.6167	2.0708	2.6250	2.2208	2.6750	2.6583	3.1500	2.9792
	Std. Deviation	.78154	.74004	.73747	.73226	.74143	.70274	.66781	.74375	.73689	.85738	.76911	.84909
	Median	2.6250	2.2500	2.7500	2.2500	2.5000	2.0000	2.6250	2.2500	2.7500	2.5000	3.2500	3.1250
	Minimum	1.00	1.00	1.25	1.00	1.25	1.00	1.50	1.00	1.00	1.00	1.50	1.00
	Maximum	4.50	4.00	4.50	4.75	3.75	4.00	4.50	4.00	4.50	4.25	4.50	4.50
Total	N	505	505	505	505	505	505	505	505	505	505	505	505
	Mean	2.4881	2.0718	2.4530	2.4876	2.6876	2.0856	2.6421	2.3495	2.7010	2.6332	2.8114	2.7505
	Std. Deviation	.80771	.74280	.81749	.77423	.79671	.79149	.66573	.78498	.73679	.72543	.80561	.82878
	Median	2.5000	2.0000	2.5000	2.5000	2.7500	2.0000	2.7500	2.2500	2.7500	2.7500	2.7500	2.7500
	Minimum	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Maximum	4.75	4.00	4.75	4.75	5.00	4.50	4.75	5.00	4.75	4.75	5.00	5.00

Table2. The results of ANOVA for the determining of difference between elite, amateur, and blind chess players in mental skills

		Sum of Squares	Df	Mean Square	F	Sig.
Goal-setting	Between Groups	3.341	2	1.670	2.576	.077
	Within Groups	325.463	502	.648		
	Total	328.804	504			
Self-confidence	Between Groups	3.435	2	1.717	3.139	.044
	Within Groups	274.650	502	.547		
	Total	278.085	504			
Commitment	Between Groups	12.099	2	6.050	9.353	.001
	Within Groups	324.721	502	.647		
	Total	336.821	504			
Reaction to stress	Between Groups	2.936	2	1.468	2.463	.086
	Within Groups	299.174	502	.596		
	Total	302.110	504			
Relaxation	Between Groups	.671	2	.336	.528	.590
	Within Groups	319.239	502	.636		
	Total	319.910	504			
Control of stress	Between Groups	.233	2	.117	.185	.831
	Within Groups	315.500	502	.628		
	Total	315.733	504			
Refreshment	Between Groups	.146	2	.073	.165	.848
	Within Groups	223.222	502	.445		
	Total	223.368	504			
Concentration	Between Groups	1.138	2	.569	.923	.398
	Within Groups	309.424	502	.616		
	Total	310.562	504			
Refocusing	Between Groups	.168	2	.084	.154	.857
	Within Groups	273.432	502	.545		
	Total	273.600	504			
Mental Imagery	Between Groups	.044	2	.022	.041	.959
	Within Groups	265.188	502	.528		
	Total	265.232	504			
Mental Training	Between Groups	7.812	2	3.906	6.142	.002
	Within Groups	319.285	502	.636		
	Total	327.097	504			
Planning Competition	Between Groups	3.578	2	1.789	2.622	.074
	Within Groups	342.609	502	.682		
	Total	346.187	504			

DISCUSSION AND CONCLUSION

The results of this study showed there is only a significant difference between elite, blind, and amateur male and female chess players in the self-confidence, commitment, and mental training components of mental skills and there is no significant difference between elite, blind, and amateur male and female chess players in other components of mental skills. The results of this study are consistent with the results of Sharif Far (2008); Riahifarsani, et al (2013); Sotoudeh, et al (2012); and Domonikus, et al's (2009) study [7, 8, 9, 11]. Sharif Far's (2008) study showed that there is no significant difference between gender and each of research variables [7] and Riahifarsani, et al (2013) expressed that there is no significant difference between male and female athletes' emotional intelligence and mental skills [9]. Sotoudeh, et al's (2012) study showed that the elite taekwondo players were better than non-elite taekwondo players in the relaxation, goal-setting, self-confidence, commitment, and planning competition [8] and Domonikus, et al's (2009) study that they evaluated the relationship between mental skills and anxiety in hokey athletes and they expressed that the difference between male and female is related to the severity of anxiety and self-confidence [11].

The results of this study is conflict with the results of Torabi (2005); Ellof (2011); Charanjit and Jaspal's (2014) study [6, 12, 13]. The 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 [6]. Ellof (2011) stated that women are better than men in goal-setting, self-talk, and commitment while men were better than women in response to stress [12]. 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 [13].

According to the result of this study that there is no significant difference between elite, blind, and amateur male and female chess players in the components of mental skills except self-confidence, commitment, and mental training components, and all subjects were at the same level. We should consider that there are certain conditions in every sport and it needs special psychological and physical requirements. So the special physical and psychological requirements play a decisive role in the athletes' success of every sport. The precision and concentration on the opponents' movements, the prediction of opponents' movements, and reaction on time play an important role in the win. According to this issue and the results of this study, we can say that the concentration, commitment, and mental

training components play more important role than other components in chess players' success. Of course, we cannot ignore the role of other components of mental skills due to those play role in the chess players success' too. But we can conclude that the role of concentration, commitment, and mental training components are more important and demanding in the chess competitions. The findings of this study show the importance of these three variables in chess players' success. Therefore, it is appropriate that coaches and sport psychologist consider these three variables in athletes' planning competitions and preparation programs. There was more emphasis on physical preparation in the past time but today there is a special emphasis on psychological preparation.

REFERENCES

- [1] G. Timuri. The comparison of deaf elite and non-elite football players' mental skills in Iran. MA thesis, Islamic Azad University of Tehran (Tehran, Iran, **2009**).
- [2] M. K. Vaez Mousavi. Validity and reliability of three mental skills questionnaires. Sport Sciences Research Institute of Iran, **2000**.
- [3] M. Nemni, A. Hayat Roshani, F. Torabi Milani. The blind's mental development, education, and rehabilitation. SAMT Publication, Tehran., **2002**.
- [4] S. Polgar. Chess training guide for parents and teachers (translated by M. Keramati Moghadam, M.H. KeramatiMoghadam). 1st edition, Sifa publication, **2010**.
- [5] R. Ferguson. The educational benefits of chess (translated by M. Keramati Moghadam, A. Kianzade, R. KeramatiMoghadam).1st edition, KeramtiMoghdam Publication, **2012**.
- [6] M. Euwe M. Chess Master (translated by Behrouzi A, Mortazavi K). Third edition, Farzin Publication, **1998**.
- [7] A. Torabi. The comparison of male and female student athletes' mental skills in individual and team sports of teacher training institutions in Iran. MA thesis, Islamic Azad University (Tehran Branch, Iran, **2005**).
- [8] F. Shari Far. The relationship between male and female's physical fitness and mental skills in Iran national team. National Olympic Academy., **2008**, 7(13),15-26.
- [9] M.S. Sotoudeh, R. Talebi, R. Hemayatalab, E. Arab Amery. *Journal of Sport Sciences.*, **2010**, 6 (1), 32-38.
- [10] L. Riahifarsani, S. Naghian, M. Mohammadi. *Journal of Advances in Applied Sciences.*, **2013**, 4(4), 135-139.
- [11] J. H. Salmela, S. Monfared, F. Mosayebi, N. Durand-Bush. *International Journal of Sport Psychology.*, **2009**, 39, 361-373.
- [12] F. Dominikus, M. S. Omar Fauzee, M. C. Abdullah, C. Meesin, C. Choosakul. *Eur. J. Social Sci.*, **2009**, 9(4), 651-658.
- [13] M. Eloff, M. A. Monyeki, H. W. Grobbelaar. *African Journal for Physical, Health Education, Recreation and Dance.*, **2011**, 17(1), 37-50.
- [14] S. Charanjit, S. Jaspal. *Journal of Physical Education Sciences.*, **2014**, 2(5),5-7.
- [15] M. Maleki. Reliability of the instrument was the Ottawa Mental Skills Assessment Tool (OMSAT-3). MA thesis. Faculty of Psychology and Educational Sciences(Tehran, Iran, **2005**).
- [16] S. H. Sanati. (**2006**). Validation of the instrument was the Ottawa Mental Skills Assessment Tool (OMSAT-3) and the survey of effects of mental preparation program on level of mental skills in the selection of athlete participating in the Doha Asian Games. Research Project of Psychology Center of National Olympic Academy, Iran, **2006**.