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## ORIGINAL ARTICLE

# Assessing and Comparing Mental Skills of Men Players' Positions in Volleyball Premier League Team of Iran

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### ABSTRACT

Mental skills are important aspects of successful sport performance in all sport competitions. This study was designed to assess and compare the mental skills of men players' positions in premier league volleyball team in year 2015. This cross sectional research includes 69 Iran men's premier league volleyball team players in year 2015 who participated in the premier league competitions in year 2015. Mental skills as well as demographic data of the players was assessed by OMSAT-3 questioner and a personal data form. One-way ANOVA was employed to analyze the data. The result of analysis indicated that there was no significant differences between the main components of fundamental ( $p=0.21$ ), psychosomatic ( $p=0.12$ ), and cognitive skills ( $p=0.584$ ) of different positions of the volleyball players. However, there was a significant difference between the sub skills of reaction to stress (0.002) and fear control (0.020) of different positions of volleyball players. Outside hitters and opposite hitter were significantly weaker than the setters, libero and middle blocker in fear control ( $p<0.05$ ) and reaction to stress ( $p<0.05$ ). Given the importance of mental skills in the achievement of volleyball players, focusing on improving the mental skills of the mentioned positions in volleyball especially in outside hitters and opposite hitter is highly recommended.

**Keywords:** Mental skills, premier league, volleyball, positions

## INTRODUCTION

High level sport competition requires physical readiness plus sport skills; however, such conditions are no guarantee for success unless the athlete is mentally prepared as well. According to the research literature, having optimal mental skills could result in improved

status of psychomotor performance especially attention which mostly affects the sporting performance (Taheri & Irandoust, 2017). The significance of mental skill as a contributing factor to the success of athletes is well acknowledged by the sport psychologists, trainers and nearly most of the people involved in athlete training. On the other hand, being aware of the mental skills status in athletes can provide the good feedback for coaches, which cause mental balance and improve the athletes' focus leading to strong athletic performance (Irandoust, Taheri, Neto, & Lotfi, 2017). For this reason, many sport organizations have professional trainers trained in sport psychology to prepare their athletes. There are abundance of research findings to support the significance of mental skills as an important predictors of success in

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sport performance (Bahmani, Soukhtehzari, Mazaherinezhad, & Sayyah, 2015; Ebben & Gagnon, 2012; Güler & Erhan, 2017; Kruger, 2010; MacNamara, Button, & Collins, 2010; Morris, 2000; Paquette & Sullivan, 2012; Sheard & Golby, 2006; Znazen et al., 2016), therefore, the research was conducted to assess the mental skills of men players' positions in volleyball premier league team of Iran and comparing these skills among different positions.

## MATERIAL AND METHODS

The mental skill of the volleyball players participating in the major league of Iran was assessed by using OMSAT-

III. The instrument measures 12 sub skills of Goal Setting, Self Confidence, Commitment, Stress Reactions, Fear Control, Activation, Relaxation, Imagery, Mental Practice, Concentration, Reconcentration and Competition planning rated on 6-point Likert scale answered as "strongly disagree" scored 1 to "strongly agree" scored 7. The OMSAT-3's scales has internal consistency ( $\alpha = .68$  to 0.88, mean 0.78) and temporal stability ( $r = .78$  to 0.96, mean 0.86) (Durand-Bush, Salmela, & Green-Demers, 2001). The data were collected at the competition sites during the games. Sixty nine players from different positions were selected proportional to the number of positions in the game, that is, less libero and midfield defenders compared to the attackers. Statistical analysis

**Table 1. One-way ANOVA test of comparing mental sub skills of players positions**

		Sum of Squares	df	Mean Square	F	Sig.
Goal setting	Between Groups	49.223	4	12.306	1.885	0.124
	Within Groups	417.763	64	6.528		
	Total	466.986	68			
Self-confidence	Between Groups	4.054	4	1.013	.146	0.964
	Within Groups	444.555	64	6.946		
	Total	448.609	68			
commitment	Between Groups	61.957	4	15.489	2.038	0.10
	Within Groups	486.477	64	7.601		
	Total	548.435	68			
Stress reaction	Between Groups	163.608	4	40.902	4.927	0.002 <sup>1</sup>
	Within Groups	531.348	64	8.302		
	Total	694.957	68			
Relaxation	Between Groups	42.665	4	10.666	.728	0.576
	Within Groups	937.074	64	14.642		
	Total	979.739	68			
Fear control	Between Groups	118.556	4	29.639	3.159	0.020 <sup>1</sup>
	Within Groups	600.430	64	9.382		
	Total	718.986	68			
Energizing	Between Groups	58.099	4	14.525	1.276	0.289
	Within Groups	728.509	64	11.383		
	Total	786.609	68			
concentration	Between Groups	6.008	4	1.502	.084	0.987
	Within Groups	1140.804	64	17.825		
	Total	1146.812	68			
reconcentration	Between Groups	94.594	4	23.649	.758	0.556
	Within Groups	1996.391	64	31.194		
	Total	2090.986	68			
Imagery	Between Groups	32.296	4	8.074	1.554	0.197
	Within Groups	332.516	64	5.196		
	Total	364.812	68			
Mental practice	Between Groups	23.350	4	5.837	.653	0.627
	Within Groups	571.722	64	8.933		
	Total	595.072	68			

<sup>1</sup>significant at 0.05

including Analysis of variance test (ANOVA) and LSD post hoc tests was performed on data by using SPSS: PC 16.0.

## RESULTS

The result of analysis showed that there were 9 (13%) setters, 19 (27.5%) oppositions, 11 (15.9%) outside hitters, 11 (15.9%) liberos and 19 (27.5%) midfield blockers.

Further analysis was performed on data by applying one-way analysis of variance (ANOVA) to compare the

mental sub skills of volleyball players based on their positions. The result of analysis revealed that there were significant differences among the different play positions on reaction to stress and fear control ( $P=0.002$ ,  $P=0.020$ ). These results are presented in table 1.

LSD post hoc test was used to determine the sources of differences. The result indicated that there were significant differences between the setter and liberos compared to other positions in stress reaction ( $P=0.000$ ,  $P=0.025$ ,  $P=0.038$ ). The setters and liberos scored higher

**Table 2. LSD post hoc test comparing players positions in stress reaction and fear control mental skills**

Dependent Variable	(I) post	(J) post	Sig.
Stress reaction	Setter	Opposition	0.001
		Outside Hitter	0.025
		Libero	0.636
		Middle Blocker	0.038
	Opposition	Setter	0.000
		Outside Hitter	0.210
		Libero	0.001
		Middle Blocker	0.047
	Outside hitter	Setter	0.025
		Opposition	0.210
		Libero	0.059
		Middle Blocker	0.641
	Libero	Setter	0.636
		Opposition	0.001
		Outside Hitter	0.059
		Middle Blocker	0.095
	Middle Blocker	Setter	0.038
		Opposition	0.047
		Outside Hitter	0.641
		Libero	0.095
Fear control	Setter	Opposition	0.012
		Outside Hitter	0.046
		Libero	0.936
		Middle Blocker	0.104
	Opposition	Setter	0.012
		Outside Hitter	0.727
		Libero	0.006
		Middle Blocker	0.248
	Outside Hitter	Setter	0.046
		Opposition	0.727
		Libero	0.029
		Middle Blocker	0.520
	Libero	Setter	0.936
		Opposition	0.006
		Outside Hitter	0.029
		Middle Blocker	0.068
	Middle Blocker	Setter	0.104
		Opposition	0.248
		Outside Hitter	0.520
		Libero	0.068

\*. The mean difference is significant at the 0.05 level.

in stress reaction than other positions. The result also showed that there were significant differences between the setter and liberos and opposition compared to outside hitters and oppositions in fear control ( $P=0.012$ ,  $P=0.046$ ). The setters and liberos scored higher in stress reaction than other positions. These results are presented in table 2.

In addition, one-way ANOVA was used to compare the fundamental, psychosomatic, and cognitive components of mental skills of different positions. The result showed that there was no significant differences among these component based on positions ( $p>0.05$ ). These results are presented in table 3.

Additional analysis was performed by paired t-test to compare the subcomponents of fundamental, psychosomatic and cognitive mental skills based on the players' positions. The result of analysis indicated that there was significant difference between the subcomponents of fundamental versus psychosomatic ( $P= 0.001$ ), fundamental versus cognitive ( $P= 0.001$ ) and psychosomatic versus cognitive ( $P= 0.001$ ). The fundamental components of mental skill were significantly higher than the psychosomatic and cognitive components. Also, the cognitive components of mental skill were significantly higher than the psychosomatic components. These results are presented in table 4, 5 and 6.

**Table 3. One-way ANOVA table comparing fundamental, psychosomatic and cognitive components of players' positions**

		Sum of Squares	df	Mean Square	F	Sig.
Fundamental	Between Groups	1.323	4	.331	1.478	.219
	Within Groups	14.322	64	.224		
	Total	15.646	68			
psychosomatic	Between Groups	1.676	4	.419	1.870	.127
	Within Groups	14.344	64	.224		
	Total	16.020	68			
Cognitive	Between Groups	1.071	4	.268	1.300	.279
	Within Groups	13.178	64	.206		
	Total	14.249	68			

**Table 4. Comparing fundamental versus psychosomatic Skills of different positions**

Post	Mental Skill Components	t	df	Sig. (2-tailed)
Setter	fundamental - psychosomatic	8.175	8	0.001
Opposition	fundamental - psychosomatic	22.150	18	0.001
Outside Hitter	fundamental - psychosomatic	11.405	10	0.001
Libero	fundamental - psychosomatic	8.977	10	0.001
Middle Blocker	fundamental - psychosomatic	16.615	18	0.001

**Table 5. Comparing fundamental versus cognitive skills of different positions**

Post	Mental Skill Components	t	df	Sig. (2-tailed)
Setter	fundamental - cognitive	7.718	8	0.001
Opposition	fundamental - cognitive	16.066	18	0.001
Outside Hitter	fundamental - cognitive	9.746	10	0.001
Libero	fundamental - cognitive	10.851	10	0.001
Middle Blocker	fundamental - cognitive	15.493	18	0.001

**Table 6. Comparing psychosomatic versus cognitive skills of different positions**

Post	Mental Skill Components	t	df	Sig. (2-tailed)
Setter	psychosomatic - cognitive	-1.619	8	0.144
Opposition	psychosomatic - cognitive	-6.153	18	0.001
Outside Hitter	psychosomatic - cognitive	-1.760	10	0.109
Libero	psychosomatic - cognitive	-.988	10	0.346
Middle Blocker	psychosomatic - cognitive	-4.381	18	0.001

## DISCUSSION AND CONCLUSION

This study was conducted to assess the mental skills of volleyball players in major league of volleyball in Iran according to their playing position and secondly to compare these skills based on the players position. These skills were assessed by using OMSAT-III; an instrument that has international reputation and has been validated by different researches. The result of analysis indicated that there were not any significant differences among the mental subskills of different positions of players except the subskills of reaction to stress and fear control of different positions of men volleyball players in major league of volleyball in Iran. The setters and liberoes were in a better condition compared to other positions in these two subskills. These results are similar to that of findings of Mostafa, et al. (2016) who examined the mental subskills of junior men national volleyball team of Iran (Mostafa & Mansour, 2016). A visual inspection of scores reveals that the players scored very poorly on subskills of psychosomatic and cognitive components. For that reason, additional analysis was performed to compare fundamental, psychosomatic, and cognitive sub-components of mental skills of volleyball players. The results indicated that the players were significantly in a higher level the fundamental than psychosomatic or cognitive components. This type of contrast has not been performed in previous research (Güler & Erhan, 2017) when using OMSAT-III. It seem like the subskills of goal-setting, self-confidence and commitment develop throughout the years of playing experience, however, such condition were not observed in psychosomatic and cognitive components. Goal setting is an important aspect of behavior that influences the motivation and by directing the attention and actions; it improves performance. Goal setting theory was initially developed in organizational psychology by Locke and Latham (1994) to describe achievement behaviors in industry settings (Locke & Latham, 1994). Bueno (2008) claimed that goal setting is one of the most effective psychological strategies for improving performance and motivation in organizational settings (Bueno, Weinberg, Fernández-

Castro, & Capdevila, 2008). When an individual define goals, it is likely to set different categories of goals including hard, moderate, or easy goals (Guelmami, Hamrouni, Agr, & ebi, 2014). Hard goals require very hard efforts and are achievable with great difficulty; in most cases may lead to failure and frustration. Goal setting may be a function of athletes' experience. They learn through years of experience to set goals that are realistic based on their ability, thus result in success in most circumstances. On the contrary, easy goals are achievable easily, without need of extreme effort. Moderately difficult goals have some difficulty. Moderately difficult goals are challenging, but achievable (Jia and Dong, 2006). The result of this study showed that the volleyball players were relatively skillful in goal setting compared to other subskills. Self-confidence is another important subscale of mental skill and is associated with self-efficacy (Bandura, 1997). Self-efficacy is a specific form of self-perception, it is about the perceived ability one feels about a specific situation to confront a task (Hagan, Pollmann, & Schack, 2017) and has inverse relationship with anxiety (Birrer & Morgan, 2010).

The volleyball players of major league showed low scores on other subscale of mental skills including relaxation, concentration, and reconcentration, fear control, energizing, imagery, competition plan and mental practice. Williams and Krane (2001) has identified a number of psychological characteristics of highly successful athletes (Olympians) including well-developed competition plans, well-developed coping strategies, and pre-competitive mental preparation (Williams & Krane, 2001). Gould et al., (2002) also showed that psychological skills differentiate between successful and unsuccessful athletes (Gould, Dieffenbach, & Moffett, 2002). The result of this study showed that the players in major league volleyball competitions lacked some of the important mental subskills. It was concluded that contrary to the fundamental mental skills that may improve to some extent as a result of playing experience in the game, psychosomatic and cognitive mental skills require specific training and they develop only through specific training program.

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