

The role of Meta-cognitive beliefs on stress in the volleyball players of Iran National team

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Abstract: Tension or stress or mental pressure in Psychology means pressure or force, and any stimulus that creates the tension in the human, stressful or tension factor is called. Goal of this research is, examining the moderator role of meta-cognitive beliefs on stress in the member of volleyball national team of adolescents and adults, girls and boys volleyball federation Islamic Republic of Iran. The statistical population included all members of the national team volleyball adolescents, youth and adults, girls and boys Islamic Republic of Iran that now as national team members in 2012 were selected. Out of this number based on random sampling method and based on Morgan table 85 people boys and girls (54 boys and 31 girls) were selected as sample. The results of research showed that meaningful and negative relationship is between meta-cognitive beliefs and athletic stress. Relationship between meta-cognitive beliefs and sport access is a meaningful and positive relationship. Meta-cognitive beliefs have mediator role in the between stress with athletic success and this role was meaningful at the level of 0.01. In addition, meta-cognitive beliefs could predict rate of athletic success.

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1. Introduction

Stress and everyday crises is including threats of physical and mental health (Bennett and Wells, 2010). The fact is that stress is an inevitable issue in everyday life (Bundes, 2006). But it is important how people cope with the crisis, the study of the human response in stressful situations, shows that the human against threats and signs of risk with stress reacts (Rinz et al., 2005). But the severity of these reactions (stress), depending on a specific situation and how much they perceived stressor, fluctuating (Kenova vs and Delyz, 2009). Athletes due to having numerous sport competitions and encountering with rivals endure a lot stress; on the other hand success rate of sport can have a negative relationship with the athletes stress. This means that whatever rate of person's success is higher; we can say that this experience will reduce athletic stress. Accordingly, numerous researches show that meta-cognitive beliefs such as uncontrollability scale, positive beliefs, self-awareness, cognitive confidence, and the need to control of thoughts as moderator variables could affect on the relationship between stress and sport access. Mediator variable is a variable that can affect relationship the main first and second variable of research.

Folkman and Lazarus (1984), believe, those who believe when deal with stress, have assistance resources at their disposal, show less vulnerable to stress. One of the variables that have important role on the perceived stress is meta-cognition (Ruyossi and Wales, 2008). According to Flavell (1979), meta-cognition, knowledge or cognitive processes that in evaluation, monitoring or control of cognition is

sharing and regulates cognitive function. Most of meta-cognition theorists believe when a person is armed with meta-cognition easily with the planning and control that will have on task, addition to reduce the severity and rate of stress from various positions, can improve self performance (Ryvvy and Wales, 2008).

Subject of athletes stress and its effect on their performance also is from important Subject field of sport and sport psychology. An athlete like any other human being is faced with stressful situations in everyday life. Here what are considered, are stressful situations that exist only in sport competitions. Irak & Tosun years ago (1908) showed that a little stress, improves performance in laboratory assignments. In fact main issue is too much stress which is interfering with performance. There is an interaction between stress and sport. The other hand doing physical activity influence on the stress reduction (Ghadami 2011) and from other and athletic games because of their competitive nature, as a stressful situation, are raised (Sharifi Razavi, 2011). Usually "When athletes experience stress trying to hide real reason usually" In this conditions blame environment and blame conditions. There are many methods to deal with the stress humans that use them depending on their own knowledge or experience. Behaviorists, Cognitivists, mental-analysts and... anyone suggested method that any method is efficient in own place. Currently, the treatment of anxiety and stress is generally relies on behavioral and cognitive-behavioral theories, which is usually have been designed in form of confrontation. These treatments were effective most of the time but

not always (Wells, 2009, translation Mohammadkhani, 2011). In fact, because according to Lazarus it is believed that stress is due to a negative evaluation, should go the way which we can somehow change the athlete's mind. If we want to help people to change their mind a very important field and susceptible there are in the psychological explanations that enable us to control, modify, evaluate these factors and create a concept of adjust one's thinking.

Athletic stress is one of the concepts that are associated with cognitive beliefs and sport success, before leading to investigate these relationships, it is important to point each of these variables. The concept of stress the first time in the life sciences by Hans Selye in 1936, was raised though before it other equivalent terms, such as mental or psychological pressure was used. Selye more on the topic of Stress Physiology focused. Stress from multiple views has been defined. Postology (1999) organism responses to surrounding stimulus that is result of the interaction of organism with the environment as stress is defined. A definition is provided from interactive perspective by Lazarus & Folkman (1984). They emphasize on how of individual's perception from position. From them perspective Individuals are not the only victims of stress and how of people evaluation from stressful life events (initial evaluation) and their assessment from personal measures and coping resources for dealing with the event (secondary evaluation) determine the nature of stressors factors (Lazarus 1996). They have defined stress such: Stress is a physical and mental phenomenon through cognitive assessment from a stimulus and in result of it interaction with the environment is formed. Regardless of the different definitions, usually stress to refer to the requirements of compatibility that on the organism are forced and biological and psychological internal responses to this necessities, is used (James Butcher, Susan Minka, Jill Holly, 2007). Stress in the positive events, such as marriage and sport competitions and in negative events, such as mourning, can be seen.

Moreover, while in determining the nature of psychological disorder, without doubt, the content of thinking is important, but how of an individual think is an important dimension that provide explanations for the creation and improvement of psychological disorders, this is scope of meta-cognition (Wells, 2000). Essentially meta-cognition is a relatively new concept for the first time by Flavell (1979) was used. Meta-cognitive is process of thinking about "thinking", knowing about "what we know" and "what we do not know" and the ability for control our thoughts. Meta-cognition refers to psychological structures, knowledge, flows and processes that in control, correction and interpretation of the thinking involved, (Wells and Cartwright-Hatton, 2004).

Many sports psychologists believe that today most coaches and athletes have concluded that in order to achieve its objectives, they need mental skills, more than physical skills. Each of us by referring to your memory can recall moments that athlete despite the complete physical and technical preparation, due to mental unsuitable conditions was unable to provide the best performance. Sport success is rooted in psychological causes (Abdolsoh Zar 2007) in many sports, up to ten people of World Championship, technically and physically are at one level and what distinguishes superiors is their mental preparation. So we can say that sport optimal performance is combines from technical ability (technical, tactical) physical (strength, speed, endurance ...) and mental (concentration, self-esteem, manage stress and anxiety ...). In sport psychology and between mental skills, skills coping with stress have a special place. In fact, order to reduce the stress level of athletes and bring it to the optimum level, a lot of investigation has been done or is doing. Doing such research can provide necessary conditions for consultation, and training athlete of different field and especially volleyball.

Meta-cognition

Meta-cognition means any kind of knowledge or cognitive process in which the assessment, monitoring and cognitive control exist (Flavell, 1979). From one view, it can be considered as a generic aspect of cognition that in all cognitive activities has a role. Theory and research on meta-cognition primarily through work in cognitive growth psychology, neuropsychology, memory performance and aging have been developed (Shimomura and Metcalfe, 1994). Wole Folk (2004), from the theory of information processing, knows meta-cognition, executive control processes (such as attention, review and exercise, organize, and manipulate data). Rate of use from executive control processes cause differences in the students in learning and reminder. In other words, whatever in people process of executive control is stronger, information processing is done better in their memory (Lotfabadi, 2005).

Meta-level and physical level

Nelson and Narens (1990) reported that the idea that meta-cognition control general cognition and monitor on it, show the distinction between the two cognitive level. They have pointed out that cognitive processes in two or multi-level act associated with together. This levels meta-level (meta-cognitive and meta-cognitive components) and objective level (cognition and cognitive components are located at the level of consciousness) is called. In flow of the information from the objective level to meta-level, a process called monitoring or supervision cause awareness meta-level knowledge from mode of objective level. The flow of information from meta-

level to objective level is called control. The control informs objective level of what can be done later.

Meta-level is including a dynamic model. For example, one mental simulation is focused on changes over time from the objective level. This simulation includes the purpose and knowledge about methods that objective level can be used to achieve this goal. However, one problem is raised in connection with the two levels, this question that what control meta-level. One possibility is that Meta-level feedback received from direct processing, in which individual evaluate effectiveness of cognitive and meta-cognitive strategies in connection with the activated objectives, is controlled and modified.

In short, every thought requires a meta-level input, which consist a combination of process of control and monitoring. This specifies input, start, end, or change current thinking. Contemporary cognitive approaches to clinical problems do not specifies the extent of the various components comprising the thinking.

Was seen that meta-cognitive how is consisting of consciousness knowledge about the cognitive modes of person, meta-cognitive experiences and strategies of control. However, meta-cognition that is also composed of unconscious tacit knowledge that to central executive forces in the cognitive activity gives direction. For example, most of the activities that have a role in the assessment and treatment in terms of verbal are not express.

Also was brought that is how emotions can affect on judgment as a source of information and emotions how cause guidance and cognitive orientation. In information processing in the human, cognition is influenced by emotional and cognitive factors. Therefore, the manipulation of emotional states may change the assessment and cognition. However, if meta-cognition control and leads cognition and disturbances in thinking specify emotional disorder that is in the belief level, so it is important to that note the effect of meta-cognitive knowledge. One important possibility is that if can enter meta-cognition in a general cognitive model from emotion and autonomy, basis for the conceptualization and development of cognitive correct processes in cognitive-behavioral therapy is provided.

The concept of stress

Stress is an unpleasant Physiological or psychological mode that is created in response to stressful stimuli (Bermaner and Dashgelas, 2002). In fact, stress is one of the most common human problems. Our complex current system is such that our nervous system is bombarded from the stressful impulses constantly during the day, and our neuromuscular devices, remain in tension permanently. The human body acts as a single

organization, any part of the body can affect on the performance of other parts. Getting exposed high and severe stress may cause or accelerate some from the physical and mental diseases (Bermaner and Dashgelas, 2002). If the person place under a lot of stress and unable to properly deal with it, the consequences will be create psychological and physical problems. Physical consequences that initially reappear in the form of excessive sweating and rapid heartbeat and breathing, but in stable of stress state, will lead to more serious health problems. And psychological the continuing stress and tension can cause a variety of disorders, such as anxiety disorders.

Research Methodology

This study in terms of method of data collection, descriptive – survey from type of correlation and in terms of objective is fundamental. Fundamental research is research that explores the nature of things, phenomena and relationships between variables, laws and construction with the experiment of theories and helps development of knowledge scientific discipline (Delaware, 2000). Descriptive study included a set of methods aimed at describing conditions or studied phenomena. Conducting descriptive research can be only for better understanding the current situation or help the decision making process. Furthermore, in the correlation research that is considered one of the descriptive research methods, the relation between variables can be analyzed on the basis of purpose of Research (Homan, 2009).

In order to collect data in this research two methods of library and field were used. In order to study and obtaining much information much for more accurate recognition the subject of research and application of research findings in this field, studying academic thesis, foreign and domestic published books, and the foreign Persian Journal, and lesson textbooks. Also in this method, using three standardized questionnaires is collected information about meta-cognitive beliefs, athletic stress and sport success. This study was conducted in the form of several stages:

First step: reproduce and provide existing questionnaire in research to measure meta-cognitive beliefs, athletic stress and sport success.

Second step: at this stage between targeted statistical societies using random sampling method, number of 94 people boy and girl members of the volleyball national team youth, adolescent and adults, boy and girl Islamic Republic of Iran and in two weeks is collected information from them. It should be noted that in the initial stage order to lest for any reason student of collaboration waive or unwilling to necessary cooperation the number of 94 choose and ultimately abandoning a number of incomplete

questionnaires, number of 85 people was obtained completely.

Validity and reliability of the questionnaire: in this research the reliability of the questionnaire using Cronbach's alpha was calculated in the sample of 50 people. Scales, results of Cronbach's alpha and it questionnaire are shown in Table 3-1 Cronbach's

alpha component of cognitive anxiety. The highest rate (82.0) and component of somatic anxiety lowest rate Cronbach's alpha (0.77) have shown. Cronbach's alpha appropriate generally amount of 0.82 is obtained. That shows questionnaires were the reliability.

Table 1. The results of Cronbach's alpha sport competitive anxiety

Row	Factor	Cronbach's alpha
1	Cognitive anxiety	0.82
2	Somatic anxiety	0.77
3	self confidence	0.78
<i>Total questionnaire</i>		0.82

It should be noted that each of the subscales of the questionnaire in the Likert scale and in form of three options from in no way, sometimes, often (for 1 to 3) will be scored. Also to determine the Validity of

the instrument from the analysis technique of exploratory factor was used the results in Table 3-3 as follows:

Table 2. Adequacy indicators of factor analysis of athletic competitive anxiety questionnaire

Amount	Index	
730.	K.M.O	1
.65268	Bartlett	2
0010.	<i>The level of significance</i>	

According to the results the factor analysis test can be said favorable convergent validity instrument from the specificity enjoys higher than 6.0 because the amount of KMO index and Bartlett's index level 0.01 is meaningful.

Research findings

Data analysis for verify of the assumptions accuracy for each type of research is very studies important. Today, in more researches that is relying on collected information from the subject, analysis of

information is considered from the single most important part of the research. Raw data were analyzed using SPSS software. And after processing in the form of information are available to all users. In this chapter was deal to analysis data research and research findings based on research hypotheses have been proposed. In order to examine the first hypothesis we from the Pearson correlation test, stepwise regression, multiple regression, partial correlation was used.

Table 3. Frequency distribution, frequency percentage and cumulative frequency percentage of the sample by gender, age

variable	level	gender	Frequency	frequency percentage	cumulative frequency percentage
gender		girls	31	47.36	47.36
		boys	54	52.63	100
age	15 to 20 years	girl	17	20	20
		boy	14	47.16	47.36
	21 to 25 years	girl	11	94.12	41.49
		boy	18	17.21	58.70
	26 to 30 years	girl	3	52.3	1.74
		boy	9	58.10	68.84
	31 to 36 years	girl	0	0	68.84
		boy	7	23.8	91.92
	36 years and over	girl	0	0	91.92
		boy	6	05.7	100

Table 4.1 and Figure 4.1 shows that the sample from the 31 women (36.47%) and 54 men (53.52%) in a total from 85 people was formed. As can be seen from the table based on Table 4.1 and Figure 4.2, 17 people (20%) of girls and 14 (16.47%) of boys at age 15 to 20 years, 11 people (12.94%) of the girls and 18 (21.17 percent) of the boys at 21 to 25 years, 3 people (3.52%) of the girls and 9 people (10.58 percent) from the boys in the age 26 to 30 years old. In addition at ages 31 to 35 years, 7 boys (8.23%) and 6 boys at the age of 36 years and above (7.05 percent), but none of the girls are not in this age range.

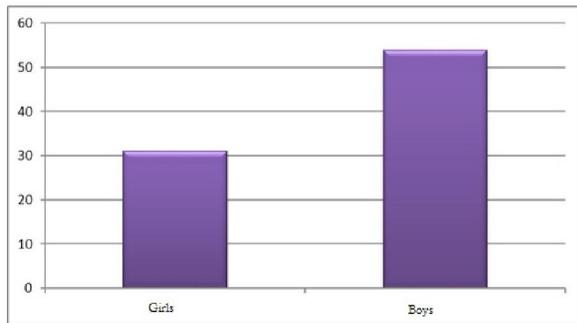


Figure 4.1 percent distribution of the sample group based on gender

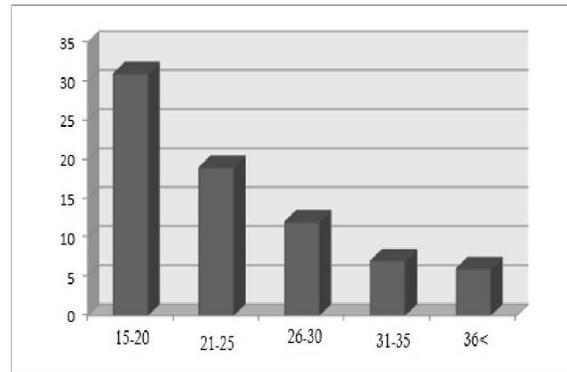


Figure 4-2. The frequency distribution of sample according to age

In this part is investigated research hypothesis. In order to use of parametric tests and examine the hypothesis requires two presumptions normal distribution of variables in the society and equality of variance to be investigated. Therefore initially these two presuppositions are provided for all variables, then evaluation of each one of the hypotheses also will be deal it again review. Shapiro test results on the presuppositions normal scores of all variables in the society, is presented in Table 4-3.

Table 4. Shapiro test presuppositions about normal scores of all variables in society

Research variables	The level of significance	Degrees of freedom	Shapiro Statistic
Meta-cognitiev beliefs	28.0	84	89.0
Athletic success	29.0	84	87.0
Athletic stress	760.	84	91.0

As can be seen in Table 4-3 normality default is not rejected in any of the cases and can be used for parametric test ($p > 0.05$).

First hypothesis: there is a relationship between Meta-cognitive beliefs and Athletic stress.

To investigate this hypothesis, questions related to the three predictor variables (cognitive anxiety, somatic anxiety and self confidence) using Pearson correlation coefficients were analyzed. The results of this analysis are presented in Table 4-5. As can be seen in Table 4.5, the results of the analysis of data express that meta-cognitive beliefs of girl and boy athletes with three predictor variables (cognitive anxiety, somatic anxiety and self confidence), a significant correlation (with negative direction) have at level 0.01

This means that with increasing meta-cognitive beliefs girl and boy athlete's decreases cognitive anxiety, somatic anxiety and their self-confidence and vice versa by reducing them meta-cognitive beliefs cognitive anxiety, somatic anxiety and self confidence

increases in them. Highest rate of significant correlation between predictor variables with the criterion variable is related to variable "physical stress" with the amount of -0.48 and the lowest rate of correlation related to variable "cognitive anxiety" with the amount of -0.3.

Table 5. The results of the Pearson correlation coefficient between the predictor variables and the dependent variable (metacognitive beliefs)

Variables	The level of significance	Correlation
Cognitive anxiety	01.0	34.0-
Somatic anxiety	01.0	48.0-
self confidence	01.0	46.0-

Discussion

Athletic performance and success is largely influenced by the usual athletic stressful factors such as committing a mental or physical error, pain of

tolerance and discomfort, seeing fraud or competitor success, receiving a penalty from the referee and reprimand from the coach, will be (Anshel Williams and Williams, 2000). The results show, that the inability in effective coping with athletic stress is detrimental for athlete performance and personal satisfaction (Gadria and Blondin, 2002). One of the cases that cause stress reduction and increase athletic success is meta-cognitive beliefs. As mentioned in the first chapter of this research main purpose of this research is, examining the mediator role meta-cognitive beliefs on relationship between stress and athletic success of National Volleyball team of the Islamic Republic of Iran. In the second quarter theoretical foundations and experimental of present research were studied and in the end of the chapter summary of done researches on the relationship meta-cognitive beliefs with stress and sport access was presented. In the third chapter from questionnaire in used research method from questionnaire the subjects' demographic characteristics, MCQ Wales, athletic competitive anxiety test and questionnaires of athletic success was used. Validity and reliability of the questionnaire enjoy from suitable condition. Statistical population included all members of the national team adolescents, youth and adult volleyball girls and boys Islamic Republic of Iran which is now as the national team in 2012 were selected. Out of this number based on random sampling method and based on Morgan table 85 people boys and girls (54 boys and 31 girls) were selected as sample. To analyze the data, Descriptive and inferential statistics indices with method the Pearson correlation, partial correlation and multiple regression analysis were used. The results showed that is significant negative relationship between meta-cognitive beliefs and athletic stress. A significant positive correlation is between meta-cognitive beliefs and athletic access. Meta-cognitive beliefs have the mediator role in the relationship between stress and athletic success and this role was significant at the level of 0.01. In addition, meta-cognitive beliefs could predict rate of athletic success. In this chapter also with regard to the hypothesis, the results will be discussed and at the end of chapter noting the limitations of the research, orientations and recommendations will be provided.

Conclusion

Investigate the moderating role of meta-cognitive beliefs on the relationship between stress and athletic success is one of the major and basic topics of research in the field of athletic psychology science. Unfortunately the findings of literature of this research indicate that the research in this field, especially among athletes as expected in terms of quality and quantity not appear. However, with regard to the role

and importance of athletes of volleyball field in this research was tried identifies that relationship on meta-cognitive beliefs in the moderator role on parameters of stress and athletic access among athletes. Davenport (2006), Ajayi & Fatokun (2007), London (2006), Mohammad Khani and FARjad (1388), Irak & Tosun (2008 Pérez Nieto, Redondo Delgado and Martin (2005) Reuven-Magril, O., Roseman, M., Liberman, N. & Dar, R (2009) and Pérez Nieto and colleagues (2010), Davis & Valentiner, (2000) show There is a negative relationship between stress and athletic access and meta-cognitive beliefs can cause adjustment the relationship between stress and athletic access. It is expected that by recognizing the relationship we see more athletic success and reducing stress.

1. It is suggested that dealing with the extensive research identify and examine various factors influencing cognitive beliefs of athletes.

2. It is recommended that in future research the relationship between stress and athletic success with different variables such as mental imagery studied of athletes.

3. It is recommended that research study in another level and in fact the problems of athletic success at national athletes in different fields.

4. in this method "questionnaire" is used, it is recommended that researchers interview method and observation to determine the appropriate characteristics of the athletes.

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