

# The Effects of Behavioral Intervention on Mood in Disabled Professional Basketball Players

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**ABSTRACT:** The statistical population of this study were 80 disabled in wheelchair basketball (Mage=25/10). 30 athletes who had high scores in the mean of mood components and mood disturbances were selected. The experimental group participated in 8 sessions (45 minutes) of intervention for two months. The results showed that the execution of intervention was lead a significant difference ( $P<0.001$ ) in the decreasing of the on mood scores and this intervention improved the mood in the experimental groups. Also the results were significant in the confusion, anger, depression, tension, and vigor components but those were not significant in the fatigue component ( $P>0.165$ ).

**Keywords:** Intervention, behavioral, mood, disabled, basketball.

## INTRODUCTION

Today, the psychological abilities and characteristics are one of effective factors of competitive success in athletic performance in addition to physical abilities and tactical skills in world of professional sports. Stress and anger are common in the sport competitions since the athletes are forced to compete in a stressful situation. Coaches should increase the intensity and duration of training to prepare their athletes for the participation in the great competitions (Perna, Antoni, Kumar, Cruess & Schneiderman, 1998). The purpose of this increasing is to improve the athletes' performance. The effects of increasing of volume and intensity of training do not always improve the performance (Perna, Antoni, Kumar, Cruess & Schneiderman, 1998). As physical characteristics are affected by the intensity and duration of training, psychological and behavioral characteristics are also affected by these changes. If an individual performs the trainings with moderate intensity and regularly, he/she will experience the decreasing of anxiety, depression, and the increasing of self-confidence (Bartholomew, Morrison & Ciccolo, 2005). On the other hand, the participation in sport and competitive activities may lead to the anxiety, depression, aggression, and mood disturbances (Raglin, Morgan, O'Connor, 1991). Mood states is one of the most important variables that it was considered as an effective factor for sports execution in sport psychology and it are used for better and more accurate predictions of athletes' performance (Raglin, Morgan & O'Connor, 1991). Researchers consider mood as a set of fleeting senses that is variable in intensity and duration and it is usually longer than excitement. They consider it as a factor that is intervened in the assessment and interpretation of a psychological situation and about performance in the past, present and future time (Terry, lane & Nevill, 2005). Morgan, Brown, Raglin, O'Connor & Ellickson. (1987) found that Increases in training volume correspond to elevations in the total mood disturbances after ten years of study about mood. They have reported that the athletes' assessment according to the scores of profile of mood states is a potential method to prevent of mood disturbances. According to the two dimensions of mood (positive and negative) we can consider the anxiety, depression, anger, fatigue, and confusion as the negative mood and the vigor as the positive mood that these elements constitute the profile of mood states (Terry, lane & Nevill, 2005). Nowadays the experts of sport and exercise psychology present the principles and guidelines for athletes' peak performance especially in elite levels using mental skills and their unique approaches (Weinberg and Gould, 2010). The cognitive behavioral approach is one of the most important and most widely used approaches in the sport psychology literature (McArdle and Moore, 2012). The knowledge of sport psychology is trying to organize the humans' thought patterns

using effective and applied methods since the role of thinking is very clear in the formation of excitements and behaviors. The cognitive behavioral interventions are one of these methods that examine and change the assumptions that lead to develop poor functions and emotions with the identification of thoughts (Ledley, Marx & Heimberg, 2010). This model affects on athletes' perceptions of situations that it will affect on their performance in these situations as well (Katz and Hemmings, 2010). Also an athlete can create a wide range of useful opposition methods with the building of this ensure in the new thinking thus he/she can overcome the problems (Katz and Hemmings, 2010). The cognitive therapists often apply the behavioral techniques: relaxation, desensitization, reinforcement and punishment, breathings, etc. that those are the supplement of cognitive techniques and reinforce the changes in the intellectual processing. The combination of cognitive and behavioral techniques is useful to intervene in situations where the function is associated with stress (McArdle and Moore, 2012). (Perna, Antoni, Kumar, Cruess & Schneiderman, 1998) examined the Cognitive-behavioral intervention effects on mood and cortisol during exercise training. They concluded that the experimental group had a significant decreasing in the depression, fatigue, and cortisol components. Increase in negative effect and fatigue were also significantly associated with cortisol increase that it had decreased during exercise. Disabled sport is very important professional sports that its community needs to use the services of sport psychology. Disabled athletes who participate in competitive sports in the professional levels need services of sport psychology more than other athletes due to their special condition (Harbalis, Hatzigeorgiadis & Theodorakis, 2008).

The sport psychologists who study athletes with disabilities believe the disabled athletes' participation in sport is one of the most important effective factors in the disabled athletes' physical and psychological dimensions (Hanrahan, 1998). Today, researchers try to identify the disabled athletes' needs to plan mental skills interventions (Hanrahan, 1998) and to examine the effectiveness of different training programs and mental skills interventions (Harbalis, Hatzigeorgiadis & Theodorakis, 2008). Hanrahan, (1998) stated that the mental skills trainings for athletes with disabilities are similar with the programs that use by athletes without disabilities. The done studies have shown that athletes with disabilities have considerable mental skills like healthy people and their sports performance are affected by these skills (Gorely, Jobling, Lewise & Bruce, 2002). Ellis, Randall & Punnett. (2013) studied the effects of a single bout of exercise on mood and self-esteem in men and women (N=54) with mental health disturbances. Quantitative questionnaire was completed immediately pre and post a single, 45 minute bout of moderate intensity exercise, consisting of the Brunel Universal Mood States (BRUMS) questionnaire and the Rosenberg Self Esteem Scale (RSE) scale. The significant findings highlight the importance of exercise promotion within this population group, and the potentially beneficial role that a single bout of exercise can have on mood and self-esteem in patients experiencing mental health problems (Ellis, Randall, & Punnett, 2013). Neil, Hanton, and Mallalieu. (2013) studied the effects of cognitive behavioural intervention on the excitement and performance in golf players (N= 4) over a 34-week periods. The results of this study showed that the golfers felt the intervention improved the performances. Also the results indicated changes in performers' focus from their emotions and negative thoughts towards the task in hand. Indeed, the intervention was suggested to promote a change in focus to play the best shot possible and confidence to perform during problem holes (Neil, Hanton & Mellalieu, 2013). Harbalis, Hatzigeorgiadis & Theodorakis. (2008) examined the effectiveness of a self-talk intervention program on performance of wheelchair basketball drills. Twenty-two (N = 22) wheelchair basketball athletes from two different clubs of the same league participated in the study. The duration of the intervention was 12 weeks and its aim was the improvement of two fundamental basketball skills, passing and dribbling. It seems necessary that we refer to several points in relation with mentioned studies since these studies have examined separately the mood, cognitive behavioral intervention, and disabled sports. According to Ellis, Randall & Punnett's. (2013) study that exercise was as an intervention to improve mood and self-esteem in men and women with mental health disturbances, Neil, Hanton & Mellalieu's. (2013) study that they used the cognitive behavioral intervention to improve performance by a control of excitement, and Harbalis, Hatzigeorgiadis & Theodorakis.'s. (2008) study that they used the self-talk as a intervention to improve performance of wheelchair basketball drills. We can conclude that the conducting of a more accurate and more comprehensive study can present more complete information to clarify ambiguities and to present the effective strategies with a approach of effects of psychological intervention such as cognitive behavioral as a different and effective intervention on mood factor that it is affected by the professional sports and camps competitions especially in the disabled athletes' sports community that have a special condition than healthy people. However, we know that studies have not properly examined the potential effects of cognitive behavioral intervention of athletes' mood reactions during the stressful period of intense trainings (Perna, Antoni, Kumar, Cruess & Schneiderman, 1998). Also pervious studies that have examined the profile of mood states changes after physical activity had been more focused on the type and intensity of the activity (O'Connor , 1989). There are little studies about the disabled sport psychology and most of these studies have compared their mental factors. In addition, the survey of effectiveness of mental skills was dispersed in these studies. Therefore, the conducting this study will resolve the ambiguity of the role of cognitive

behavioral intervention together on the mood in disabled athletes who have a special condition. Thus, the conducting this study is necessary. In this regards, this study has been done to examine effects of behavioral intervention on disabled professional basketball players' of mood.

## MATERIALS AND METHODS

### **Methods**

This study was a semi empirical research and design of it included pre-test, post test with control group.

### **Participants**

The statistical population of this study were 80 disabled athletes in wheelchair basketball sport (Mage=25/10). The subjects' degree of disability was A1-A5 class that they participated in the premier league competitions. According to the pre-test, 30 athletes who had high scores in the mean of mood components and mood disturbances were selected as sample. Then, they were randomly divided into control (N= 15), and experimental groups (N= 15).

### **Instruments and Tasks**

The instrument was a demographic questionnaire to collect individual data and Brunel Mood Scale (BRUMS), with 24 items to measure athletes' mood in this study (Terry & Lane, 2003).

### **Procedure**

The purpose and the process of study were explained to subjects. The participants were assured that their data will be kept confidential and those will not be available to anyone. Then all subjects completed a consent form to participant in this study and they attended with the complete satisfaction in this study. The researchers provided the best conditions as much as possible due to the subjects' specific circumstances (disability), to observe all moral and valuable aspects of study. The researchers could not control the confounding factors and variables such as genetics, marital status, sleep status, nutrition, and regular trainings in this study that these factors may have affected on the results of this study. Then, the experimental group was trained during eight 45-minute sessions (two sessions per week), and the control group had not other physical and mental trainings except its specialized trainings. The intervention was designed in a positive direction for mood changes with pay attention to the present of behavioral technique in behavioral intervention group and on the basis of certain basic principles in behavioral interventions for the experimental group in this study. The content of instructional and training sessions was formulated by related sources and research support by the consultant and researcher as well as the conformation of three experts of counseling psychology. The content of program was based on instruction and training of behavioral restructuring and deep breathing technique. The data was collected in the post-test stage through the questionnaire at the end.

### **Data Analysis**

The collected data were classified by descriptive statistical methods and were analyzed by independent t-Test. The SPSS software (version 21) was used for data analysis ( $\alpha \leq 0.05$ ).

## RESULTS AND DISCUSSION

### **Results**

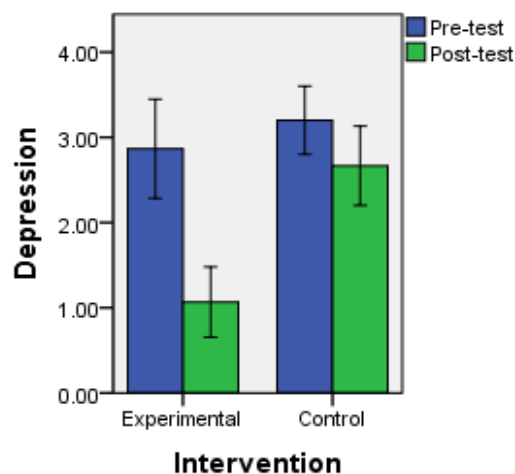
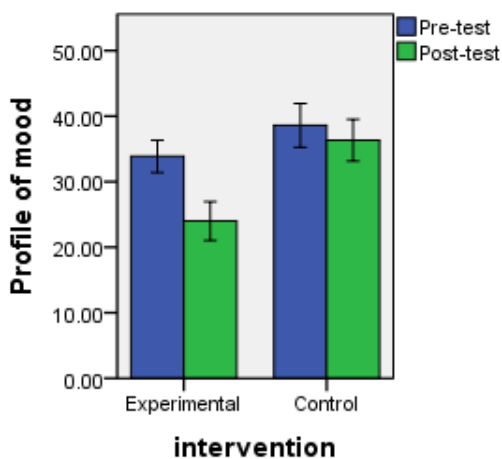
The results of table (1) show the mean and standard deviation of subjects' age. The results of table (2) show the mean and standard deviation of profile of mood, depression, tension, vigor, anger, fatigue, and confusion of the experimental and control groups in the pre and post-test. Also figures (1) Show the results of independent t-test for the analysis of mean scores of profile mood and its subscales in the experimental and control groups.

Table1. The mean and standard deviation of subjects' age

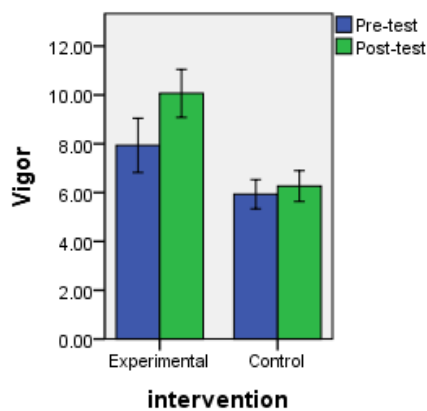
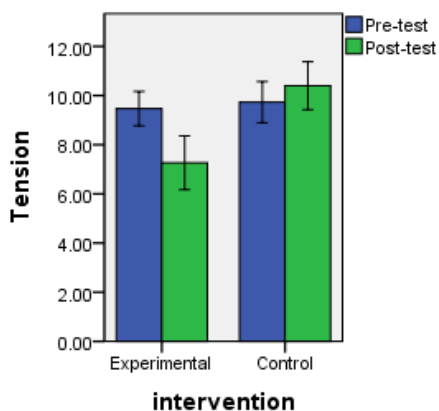
Variable	Mean	SD	Minimum	Maximum
Age	25.1000	3.222009	20	31

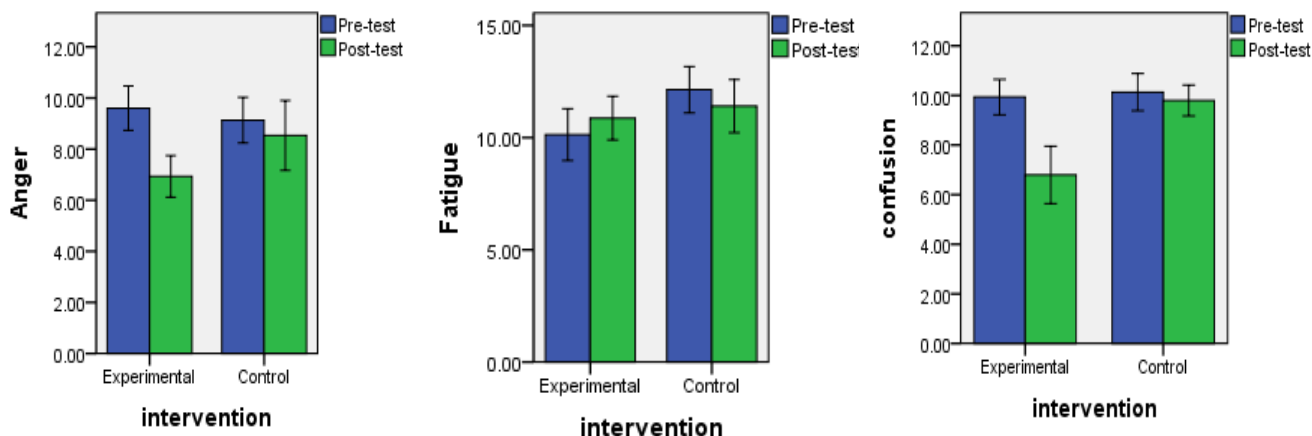
Table 2. The mean and standard deviation of profile of mood, depression, tension, vigor, anger, Fatigue, and confusion in the experimental and control groups in the pre and post-test

Variables	Groups	Pre-test	Post-test	the difference between pre and post-test
Profile of mood	Experimental	33/8667±	24/0000±	85202.3 ± -9/8667
	Control	38/6000±	36/3333±	± 6/85010-2/266
Depression	Experimental	2/8667±	1/0667±	67937.0 ± -2/0000
	Control	3/2000±	2/6667±	98806.1 ± -0/5333
Tension	Experimental	9/4667±	7/2667±	65616.1 ± -2/2000
	Control	9/7333±	10/4000±	98806.1 ± 0/6667
Vigor	Experimental	7/9333±	10/0667±	68466.1 ± -2/1333
	Control	5/9333±	6/2667±	23443.1 ± 0/3333
Anger	Experimental	9/6000±	6/9333±	63299.1 ± -2/6667
	Control	9/1333±	±5333/8	063228.2 ± -0/6000
Fatigue	Experimental	11/4000±	10/8667±	76371.2 ± -0/7333
	Control	12/1333±	10/1333±	86523.2 ± -0/7333
confusion	Experimental	±9/9333	6/8000±	44560.2 ± -3/1333
	Control	±10/1333	9/8000±	97590.0 ± -0/3333



Error Bars: +/- 2 SE





Figures 1. The results of independent t-test for the analysis of mean scores of profile mood and its subscales in the experimental and control groups

**According to figures 1, it is observed that:**

There is a significant difference between the experimental and control groups in the profile of mood [t (22.049) = -3.745, P = 0.001]. So this behavioral intervention improved the disabled professional basketball players' profile of mood states.

There is a significant difference between the experimental and control groups in the tension subscale [t (27.115) = 4.291, P = 0.000]. So this behavioral intervention improved the disabled professional basketball players' tension.

There is a significant difference between the experimental and control groups in the depression subscale [t (23.249) = -4.280, P = 0.0010]. So this behavioral intervention improved the disabled professional basketball players' depression.

There is a significant difference between the experimental and control groups in the anger subscale [t (26.597) = 3.042, P = 0.005]. So this behavioral intervention improved the disabled professional basketball players' anger.

There is no significant difference between the experimental and control groups in the fatigue subscale [t (27.964) = 1.427, P = 0.165]. So this behavioral intervention did not improve the disabled professional basketball players' fatigue.

There is a significant difference between the experimental and control groups in the vigor subscale [t (25.670) = 3.338, P = 0.002]. So this behavioral intervention improved the disabled professional basketball players' vigor.

There is a significant difference between the experimental and control groups in the confusion subscale [t (18.348) = -4.118, P = 0.000]. So this behavioral intervention improved the disabled professional basketball players' confusion.

**Discussion**

The purpose of this study was to examine The Effects of Behavioral Intervention on Mood in Disabled Professional Basketball Players' mood. The results of this study showed that the behavioral intervention has positive effects on profile of mood and its subscales: confusion, fatigue, anger, depression, tension, and vigor. This finding is consistent with the findings of Ellis, Randall & Punnett. (2013); Neil, Hanton & Mellalieu (2013); Hamzepour (2014); Harbalis, Hatzigeorgiadis & Theodorakis (2008); Gregg, Hrycaiko, Mactavish & Martin (2004); Lane and Lovejoy (2001); and Perna, Antoni, Kumar, Cruess & Schneiderman's (1998), study. We can say about the reasons of these consistent that since the participation on sports activities and competitions may lead to the creation of anxiety, depression, aggression, and mood disturbance (Raglin, Morgan & O'Connor, 1991). So, the athletes' evaluation on the basis of the profile of mood states scores is a potential method to prevent mood disturbances (Morgan, Brown, Raglin, O'Connor & Ellickson, 1987). McArdle & Moore (2012), reported that the cognitive behavioral approach is one of the most important and the most applications approaches in sport psychology literature that it reinforces the useful changes in thinking processes by its techniques in situations that the performance is associated with stress and anxiety. Scientific studies showed that the change in person's behavior and thinking method can have the fundamental effects on person's emotional states. A behavior based on thinking and logic is the relying on reality and negative emotional states such as depression and anxiety find relief in little time. Because the cognitive behavioral approach copes with the signs of hopeless, avoidance, and evasion through planning by the achieving of awareness

level through the concentration on the present time (Wright, Basco & Thase, 2005). According to that the behavioral techniques have a relaxation role along with the cognitive techniques so the individuals feel relaxation after the performing of them. Thus, they can overcome easily the problems (Wright, Basco & Thase, 2005). This note affirms the James–Lange theory that is about the effectiveness of body on the mind. Because the breathing techniques were used for the intervention in this study so those can be the reason of effectiveness. The cortisol hormone is significantly related to the state of mood. In this regards, Perna, Antoni, Kumar, Cruess & Schneiderman's (1998), stated about that the effects of cortisol hormone secretion decreased by cognitive behavioral intervention that is due to the stress and fatigue and as well as mood disturbance.

## CONCLUSION

The sessions were held in 2 times a week due to the lack of time since camps and competitions were spent in the last months. Therefore these results may have been affected in the fatigue subscale due to the mentioned reasons and the intervention had not effects on the fatigue subscale. This finding is conflict with the results of Ellis, Randall and Punnett (2013); Neil, Hanton, and Mellalieu (2013); Hamzepour (2014); Gregg, Hrycaiko, Mactavish & Martin (2004); Naoi (2005); Lane and Lovejoy (2001); and Perna, Antoni, Kumar, Cruess & Schneiderman's (1998), study. The lack of this consistent can be due to the subjects' disability in this study. The behavioral intervention had a significant effect on the subjects' positive mood except the fatigue subscale in this study according to the limitations such inability to holding a intervention session per week due to the completion of the camps and league competitions, lack of control of subjects' mental and emotional states during performing of test, lack of control of effective problems on subjects' personal life, lack of control of genetic effective problems, and inability to selection of people with the same intelligence.

### **Practical application**

We recommend that is used the cognitive behavioral intervention as a strategy to improve the disabled professional basketball players' profile of mood states and performance in the training camps of competitions.

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