



Effects of Anuloma-viloma and Bhastrika Pranayama Practices on Mental Toughness among University-Level Sportspersons

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Abstract

Background: Psychological preparation of athletes is one of the basic elements in sports training. In order for a player to be able to improve his/her sports skill level, he or she should effectively cope with stress, challenges and difficulties they face during the sporting competition and during training.

Objective of the study: To determine the effect of Anuloma-viloma and Bhastrika Pranayama Practices on Mental Toughness among University-Level Sportspersons.

Methods: Thirty (30) University-Level Sportspersons were selected and the nature of sampling was purposive and on random basis from U.P. and their age ranged between 18-25 years. The subjects were divided into two equal groups on random basis consisting of fifteen subjects in each group. The Anuloma-viloma Pranayama & Bhastrika Pranayama training period for experimental groups was of six weeks. Mental Toughness Inventory (MIT) developed by Dr. Alan Goldberg (1977) was used. For this study pre-test – post-test randomized group design (Thomas, Nelson & Silverman, 2005) consisting of one experimental group (n=15) and one control group (n=15) was used. The experimental group was trained five days per week for the period of six weeks. As the per session of practices was of 50-60 minutes. Each experimental session was of 50-60 minutes. The load intensity was kept low to moderate in first week and increased progressively in proceeding week moderate to high and repetition and sets were increased respectively. The members of control group were not given any practices/training during this period. The one-way analysis of co-variance (ANCOVA) and to test the significance of difference between means LSD test was applied with setting the significant level at 0.05 was used to find out the effect of Anuloma-viloma and Bhastrika Pranayama Practices. All the statistical calculation was carried out using SPSS version 16.0.

Results: The experimental group showed significant improvement in Mental toughness after six weeks of Anuloma-viloma and Bhastrika Pranayama Practices on regular basis. The control group showed no significant improvement in this variables.

Conclusion: The obtained 't' test value of experimental group was greater than the table value. The 't' value of Mental Toughness 24.56 is significant at 0.05 level of significance. The results clearly indicated that the Mental toughness of the experimental group improved due to the Anuloma-viloma and Bhastrika Pranayama Practices/training on University-Level Sportspersons.

Key Words: Mental Toughness, Anuloma-viloma and Bhastrika Pranayama.

Introduction:

Psychological preparation of athletes is one of the basic elements in sports training. In order for a player to be able to improve his/her sports skill level, he or she should effectively cope with stress, challenges and difficulties they face during the sporting competition and during training.

Research in applied sport sciences agree that there is a great need for mental training in addition to technical, tactical and physical training to help athletes to reach their peak performance and excel during competition.

Mental toughness is dependent on genetic factors, but is also affected by environmental influences, so it can be deliberately developed According to Crust and Clough [10], in developing mental toughness, an environment that supports, but also challenges, social support and learning through experience ending with one's own reflection is important.

Mental toughness is a measure of individual spirit and confidence that may predict success in sport, education and the workplace. As a broad concept, it emerged in the situation of sports training, in the context of a set of attributes that allow a person to become a better athlete and able to cope difficult training and difficult competitive situations and emerge without losing confidence. In recent decades, the term has been commonly used by coaches, sport psychologists, sports commentators, and business leaders. "Mental toughness" is normally used colloquially to refer to any set of positive attributes that helps a person to cope with difficult situations. Coaches and sport commentators freely use the term mental toughness to describe the mental state of athletes who persevere through difficult sport conditions to succeed. For example, it is often simply applied as a default explanation for any victory, which is highly difficult as an attribution. Criticisms about the use of this unfocused approach abound for example, **Moran (2012)**. Competitive sports are being focused upon by the researchers of different scientific fields in order to expose the possibility to know the different variables which influence it. According to sports sciences, experts, there are many factors that affect optimal performance levels and an athlete, s smooth execution. One of these factors is the individual, s mental abilities (**Gonzalez, 2006**). However there are many mental factors that effect on athletes, performance but mental toughness be considered as one of most important factors. As some of experts believe that at least 50% of the athlete, s mental success is due to mental toughness (**Loehr, 1986**). **Gucciardi (2008)** defines that mental toughness is cope and withstand pressures and sports challenges. In fact, the presence of this factor results in a psychology advantage because this factor enables the individuals to better stability, concentration, and self-confidence than their opponent and have a good ability of control and coordination under stressful conditions (**Jones et al., 2002**). It seems that mental toughness has an intellectual discipline because the person response under pressure and is calm and energetic too. So people with mental toughness can create and reinforce a positive energy in them at critical situations (**Loehr, 1986**). Mental toughness has three factors: reliability, stability, and control.

1.1 Hypothesis of the study:

It was hypothesised that the Anuloma-viloma and Bhastrika Pranayama Practices could have positive effect on Mental Toughness among University-Level Sportspersons.

1.2 Objectives of the study

- To determine the effect of Anuloma-viloma and Bhastrika Pranayama Practices on Mental Toughness among University-Level Sportspersons.

2. Methodology

2.1 Selection of Subjects:

Thirtry (30) University-Level Sportspersons were selected and the nature of sampling was purposive and on random basis from U.P. and their age ranged between 18-25 years. The subjects were divided into two equal groups on random basis consisting of fifteen subjects in each group.

The first group was administered with Anuloma-viloma and Bhastrika Pranayama Practices/training and the second group was Control group (without Training).

2.2 Selection of Variables:

Keeping the feasibility criterion in mind, the researcher selected the following variables for the study:

1. Mental Toughness.

2.3 Criterion Measure

Mental Toughness Inventory (MIT) developed by Dr. Alan Goldberg (1977) was used.

2.4 Experimental Design of the study:

For this study pre-test – post-test randomized group design (**Thomas, Nelson & Silverman, 2005**) consisting of one experimental group (n=15) and one control group (n=15) was used.

2.5 Collection of Data:

Prior to the administration of Anuloma-viloma and Bhastrika Pranayama Practices pre test was conducted to collect the data and after the completion of six weeks of Anuloma-viloma and Bhastrika Pranayama Practices it was repeated for collecting the post practices data.

2.6 Administration of Anuloma-viloma and Bhastrika Pranayama Practices/Training

The experimental group was trained five days per week for the period of six weeks. As the per session of practices was of 50-60 minutes. Each experimental session was of 50-60 minutes. The load intensity was kept low to moderate in first week and increased progressively in proceeding week moderate to high and repetition and sets were increased respectively. The members of control group were not given any practices/training during this period.

Table 1
Schedule of Anuloma-viloma and Bhastrika Pranayama Practices

Table-1 Distribution of 30 to 45 Minutes <i>Pranayama</i> training programmed				
Weeks	Duration	Distribution of time	Training	Rounds/Sets
I to II	10 Minutes	04 Minutes	<i>Anuloma-viloma</i>	Two
		02 Minutes	Break between rounds	
		04 Minutes	<i>Anuloma-viloma</i>	
	06 Minutes		Rest (<i>Savasana</i>)	One
	07 Minutes	02 Minutes	<i>Bhastrika Pranayama</i>	Two
		03 Minutes	Break between rounds	
		02 Minutes	<i>Bhastrika Pranayama</i>	
07 Minutes		Rest (<i>Savasana</i>)	One	
Total duration of Training – 30 Minutes				
III to IV	13 Minutes	05 Minutes	<i>Anuloma-viloma</i>	Two
		03 Minutes	Break between rounds	
		05 Minutes	<i>Anuloma-viloma</i>	
	05 Minutes		Rest (<i>Savasana</i>)	One
	12 Minutes	02 Minutes	<i>Bhastrika Pranayama</i>	Three
		03 Minutes	Break between rounds	
		02 Minutes	<i>Bhastrika Pranayama</i>	
03 Minutes		Break between rounds		
02 Minutes		<i>Bhastrika Pranayama</i>		
05 Minutes		Rest (<i>Savasana</i>)	One	
Total duration of Training – 35 Minutes				
V to VI	13 Minutes	05 Minutes	<i>Anuloma-viloma</i>	Two
		03 Minutes	Break between rounds	
		05 Minutes	<i>Anuloma-viloma</i>	
	05 Minutes		Rest (<i>Savasana</i>)	One
	17 Minutes	02 Minutes	<i>Bhastrika Pranayama</i>	Four
		03 Minutes	Break between rounds	
		02 Minutes	<i>Bhastrika Pranayama</i>	
03 Minutes		Break between rounds		
02 Minutes		<i>Bhastrika Pranayama</i>		
03 Minutes		Break between rounds		
02 Minutes	<i>Bhastrika Pranayama</i>			
05 Minutes		Rest (<i>Savasana</i>)	One	
Total duration of Training – 40 Minutes				

2.7 Statistical Technique

The one-way analysis of co-variance (ANCOVA) and to test the significance of difference between means LSD test was applied with setting the significant level at 0.05 was used to find out the effect of Anuloma-viloma and Bhastrika Pranayama Practices. All the statistical calculation was carried out using SPSS version 16.0.

3. Result & Findings of the Study:

This result of the study shows that due to the Anuloma-viloma and Bhastrika Pranayama Practices/training there is an improvement of experimental group in Mental toughness level and controlled group is decreased the Mental toughness level due to the training.

Table 1:
Descriptive Statistics of Experimental Group and Control Group on Push Pass

Groups	N	N	Mean	Range	Std. Deviation	Minimum	Maximum
Experimental	Pre-Test	15	17.89	1.88	0.543	17.12	19.00
	Post Test	15	19.23	3.33	0.920	17.56	20.89
Control	Pre-Test	15	18.09	3.08	0.834	17.12	20.20
	Post Test	15	17.92	1.75	0.502	17.25	19.00

The Experimental Group of Mental Toughness Mean is 17.89 in Pre Test and Controlled Group mean is 18.09 in Pre -Test. The Experimental Group Mean is 19.23 in Post Test and Controlled Group mean is 17.92 in post- test. The Experimental Group mean in Post Test in Mental Toughness is increased from 17.89 to 19.23, there is an improvement of 1.34 from Pre Test to Post and Control Group Mean is post- test is 18.09 there is an decrease of 18.09 to 17.92 from Pre Test to Post. The performance is come down to 0.17 in the controlled group. Due to the Anuloma-viloma and Bhastrika Pranayama Practices/ Training the Experimental group has improved the Mental toughness level.

Table 2:
T-ratio of the means of experimental and control group of Mental toughness in University-Level Sportspersons

Variable	Groups	Pre-Test		Post- Test		t value
		Mean	S.D.	Mean	S.D.	
Mental Toughness	Experimental	17.89	0.543	19.23	0.920	24.56*
	Control	18.09	0.834	17.92	0.502	

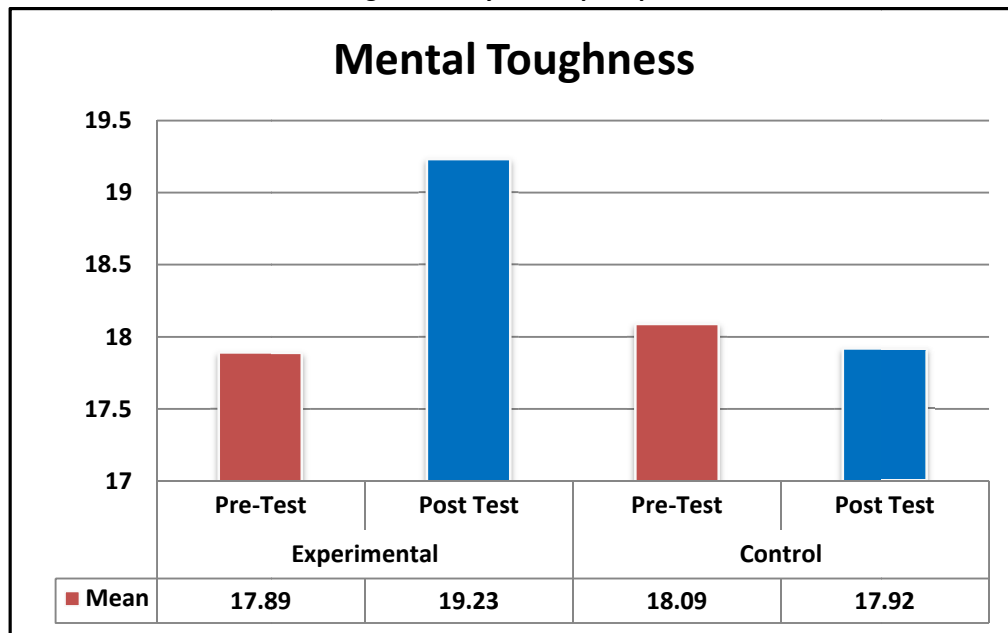
Significant at 0.05 level

In this section t- ratio was calculated to find out significance of difference between pre –test and posttest mean scores of experimental group as well as between post- tests mean scores of control group and experimental group.

The obtained ‘t’ test value of experimental group was greater than the table value. The ‘t’ value of Mental Toughness 24.56 is significant at 0.05 level of significance. The results clearly indicated that the Mental toughness of the experimental group improved due to the Anuloma-viloma and Bhastrika Pranayama Practices/training on University-Level Sportspersons.

Figure: 1

Graphical representation of Anuloma-viloma and Bhastrika Pranayama Practices/training for level of Mental toughness among University-Level Sportspersons



Discussion:

As the data in our study shows, Anuloma-Viloma and Bhastrika Pranayama appear to have a positive effect on most of the mental health parameters that were studied. a result of six weeks of Anuloma-viloma and Bhastrika Pranayama Practices/Training on regular basis. The control group had no significant improvement on these selected mental health variables as they were not provided with any training practices for University-Level Sportspersons.

Significant difference was found between the mean scores of experimental group (pre & post test) in Mental toughness (24.56). This was higher value than the required value at .05 level of significance.

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