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# Effect Of Cyclic Meditation On Autonomic Variables

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**Abstract**

**Objective:** This study aimed to evaluates the effects of cyclic meditation practices on influence of autonomic variables.**Materials and Methods:** The study was a two group pre-post study. The dependant variables were assessed prior to the intervention program and at the end of the training program. The study was conducted at anArmy Establishment in Delhi Cantt, 100 subjects were selected, 50 in experimental and 50 in control yoga group . Ages ranged from 25 to 40 years. The experimental group underwent fifteen days of cyclic meditation training and control group followed as usual routine schedule. The variables measured wereRespiration rate, pulse rate and bhramari time. **Results:** Significant pre-post changes were found in improvement in RR,PR and BHT after cyclic meditation. **Conclusion:** This suggests improvement inthe status of autonomic variables of armypersonnel.

**Key Words:**

PTSD, Yoga, Autonomic Variables, Army, HAPO

## Introduction

Studieshave found that army personnel are more prone to serious health issues (Mather, Stein, &Sareen, 2010). This is due to higher level of difficulties faced by them at all levels. Army soldiers are responsible for guarding the territorial integrity of the nation under harsh climatic conditions. This requires them to be physically robust and mentally alert under difficult weather and terrain conditionsA large body of troops is being deployed in the snowbound areas throughout the Himalayan regions to guard the iron liners. The mountain environment at high altitude evokes a series of physiological responses in human system. Sudden exposure to HA is

 

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Vol-22-Issue-10-November-2019

detrimental to physical and mental performance of lowlanders and in certain cases may even lead to dreaded condition like high altitude pulmonary oedema( HAPO ). Other factors like high wind velocity, increased ultraviolet radiation and extreme cold are responsible for acute mountain sickness, dehydration, hypothermia, chilblain ( Purkayastha& Selvamurthy,2013 ). Another survey has suggested that in high altitude like Siachen, there is more to the battle than the surviving cold.Soldiers face mental challenges every moment as they have to remain focused and composed in sub 25 degree environment for three months with only fellow soldiers for the company. Official data shows that climatic conditions take on an average of 10 Indian lives every year on the glacier. However the numbers don't reflect the everyday challenges from watching for frostbites or the chilblains that can dismember toes, to the broken tooth or an incessant headache.

Research has shown that autonomic response is greatly affected following high altitude exposure both for shorter and longer durations. Also the susceptibility to cardiovascular risks in acclimatized lowlanders staying for longer durations in high altitudes increases ( Dhar P et.al.,2014 ).This is due to sympathetic stimulation followed by blunting of thesympathetic response with prolonged hypoxia exposure. This leads to chronic hypoxia induced autonomic changes coupled with a possible reduction in intrinsic heart rate , decreased resting heart rate and increased heart rate variability at rest ( Bhattarai P et.al.,2018 ).

Soldiers face not only combat training stress but also mental and academic stress during that training period. Combatant training is related to physical toughness, great amount of endurance, stamina and alertness under unfavorable conditions. If they are not able to cope up with this high intensity training, it has impact on their mental and physical capabilities. One of the most

 

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Vol-22-Issue-10-November-2019

obvious causes of emotional stress in military settings is not just the threat of becoming injured but the lengthy deployments and combat tours, due to which soldiers have to stay away from their families for longer periods. The longer an individual is deployed, the more likely they are to experience a stressful event that will result in emotional or behavioral problems ( MHAT-5,2008). This high level of stress has negative impact on their health ( Sakshi S, 2015 ). Therefore more focus is needed for their personal life and also during active duty (Jones, Perkins, Cook, &Ong, 2008). Longer deployments have also been shown to be associated with increased depression among service members ( Adler et al., 2005 ).

One of the foremost reasons for stress in soldiers in military is that it is an organizational culture characterized by an unwillingness to display emotions or acknowledge personal weakness ( Harms et.al.,2013 ). Individual differences also contribute to emotional stress. Meta analytical studies evidence suggest that lack of social support from both family and coworkers especially leaders, is the single largest factor for developing PTSD after a traumatic experience (Brewn et al., 2000 ). The consequence of this stress can be in the form of physical and psychological. Combat stress manifests as acute stress reaction, adjustment disorder and post traumatic stress disorder (PTSD ). Suggestions for need of having field psychiatric units in the operational commands in the Indian Army were given by VSSR et.al.,2011. One variable that is proven to be of great relevance with regards to stress in armed forces and its management is transformational leadership.

Not only does military trauma in soldiers working in hostile environment in the face of enemy action increase the likelihood of developing stress related mental health disorders such as PTSD or depression but also there is evidence that traumatic experiences are related to problematic

 

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Vol-22-Issue-10-November-2019

alcohol use among them. Peculiar environment and operating conditions in army provide breeding ground for stress in army soldiers leading to suicide , killing of colleagues, fratricide etc. ( Cheema and Grewal,2013 ).

The stress management program (SMET) which is a key practice of Yoga has been found to be suitable in managing the excessive stress, improve mental health (Ganpat&Nagendra, 2011) and emotional stability (Ganpat, Nagendra, &Muralidhar, 2011) and hence enhancing executive efficiency. Further another study on managers of ONGC, a large public sector energy corporation reported significant increase in the scores of cognitive abilities, anxiety scores and in lowering the symptoms of distress in ONGC managers (Singh, Pradhan, &Nagendra, 2013). No previous study has evaluated the effect of cyclic mediation on army soldiers on autonomic variables. Hence this study was undertaken.

**Materials and Methods**

Subjects comprised 100 army soldiers volunteers (male and female, aged 25-40 years) attending fifteen days, cyclic meditation training program at an Army Establishment in Delhi Cantt, Inclusion criteria: Male army soldiers who can read and understand English well and are willing to give consent to participate in the program. Exclusion criteria: Male army soldiers who were not proficient in English language. Design: Subjects were assessed in two groups before and after the fifteen days of training programs.

**Intervention:**

**CYCLIC MEDITATION ( CM )**

Throughout the Cyclic Meditation practice, subjects should keep their eyes closed and follow the instructions from a pre-recorded audio CD that was played during the session. The instructions emphasized carrying out the practice slowly with awareness and relaxation. The practice begins by repeating a verse (40 secs) from the yoga text, theMandukya Upanishad ( Chinmayanand,

 

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Vol-22-Issue-10-November-2019

1984) ; followed by isometric contraction of the muscles of the body ending with supine rest (1 min); slowly coming up from the left side and standing at ease (called Tadasana) and balancing the weight on both feet, called Centring (2 mins); then the first actual posture, bending to the right Ardhakatichakrasana, 1 min 20 secs); a gap of 1 min 10 secs in Tadasana with instructions about relaxation and awareness; bending to the left (Ardhakatichakrasana, 1 min 20 secs); a gap as before (1 min 10 secs); forward bending (Padahastasana, 1 min 20 secs); another gap (1 min 10 secs); backward bending ( Ardhachakrasana, 1 min 20 secs); and slowly coming down in the supine posture with instructions to relax different parts of the body in sequence (10 mins). The postures are practiced slowly, with awareness of all the sensations that are felt. The total duration of the practice is 22:30 mins (Telles, Reddy and Nagendra, 2000). The control group followed as usual routine schedule.

**Assessments**

**Respiration Rate (RR):** This was taken by manual counting of abdominal movement during participant resting in supine posture.

**Pulse Rate (PR):**Place index and middle fingers on the inner side **of** wrist of participants. Count the pulses that you felt for 60 seconds.

**Bhramari time (Breath Holding Capacity)** :Each participant was asked to take slow and deep inhalation through both the nostrils and while exhaling was asked to produce humming nasal sound similar to that of a wasp. The time in second was noted.

Data analysis was carried out using SPSS-10. The paired t test was used to differentiate the changes.

**Result:**

The effect of cyclic meditation showed significant improvement in RR, BHT, and PR in experimental group whereas in control group non-significant changes in RR and BHT but significant increase in PR was foundwhich has negative effect on health, after fifteen days shown in Table 1.

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Vol-22-Issue-10-November-2019

| Table 1: Changes in RR, BHT, and PR | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Experimental Group (n=50) | | | | Control Group(n=50) | | | |
| | Mean | SD | % change | P vales | Mean | SD | % change | P vales |
| RR Before | 24.36 | 3.674 | 28.161 | <0.001 | 24.48 | 3.710 | -1.144 | 0.293 |
| RR After | 17.50 | 2.915 | | | 24.76 | 3.354 | | |
| BHT Before | 6.42 | 1.751 | -62.617 | <0.001 | 6.98 | 2.171 | 3.438 | 0.103 |
| BHT After | 10.44 | 1.514 | | | 6.74 | 1.925 | | |
| PR Before | 86.68 | 5.523 | 9.806 | <0.001 | 85.48 | 6.652 | -1.357 | <0.001 |
| PR After | 78.18 | 4.411 | | | 86.64 | 6.739 | | |

**Discussion**

This study evaluated autonomic influence on army shoulder. Present study found that reduction in RR, PR and increase in BHT indication of relaxation. This can be supported by previous study on effect of Cyclic meditation immediately after a single session found reduction in oxygen consumption (Sarang & Telles, 2006), increase high frequency component of HRV (Patra & Telles, 2010).The cyclic medition is combintion of simple asana followed by relaxation techniques. The practionner has to performed it in slow continuous movements along with awareness.

**Conclusion**

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