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**USEFULNESS OF RAJYOGA MEDITATION IN ASSESSMENT OF GENERAL WELL BEING OF BADMINTON PLAYERS AN EXPERIMENTAL STUDY****KOMAL MESHAM *¹ AND AJAY MESHAM²**¹*Asst Professor in Physiology, JNMC Sawangi (M) Wardha, DMIMSU(DU)*²*Professor in Biochemistry, JNMC Sawangi (M) Wardha, DMIMSU(DU)***ABSTRACT**

Mental health and physical health are very closely tied together, and each can exert a significant impact on other. Meditation technique is normally used in sports for the purpose of upgrading the rate of recovery after exercise or enhancing performance by improving the handling of anxiety pressure. The present study was undertaken to assess the general well being of badminton players before and after Rajyoga meditation. 30 healthy male badminton players (18-25 years old) playing at district level were randomly selected and recruited purely on voluntary basis. General well being was assessed by using WHO-QOL health questionnaire before and after giving Rajyoga meditation. Student's paired 't' test was used. Four domains of WHO QOL health questionnaire were assessed before and after Rajyoga meditation. Significant improvement in general well being was seen after Rajyoga meditation. Improvement in results was reflected as increase in self confidence and positivity in badminton players.

KEY WORDS: WHO-QOL-WHO Quality of life, Rajyoga meditation, ART- Autogenic Relaxation techniques, Mood**KOMAL MESHAM**

Asst Professor in Physiology, JNMC Sawangi (M) Wardha, DMIMSU(DU)

*Corresponding author

INTRODUCTION

Mental health and physical health are very closely tied together, and each can exert a significant effect on other¹. Meditation technique is normally used in sports for the purpose of upgrading the rate of recovery after exercise or enhancing performance by improving the handling of anxiety pressure². Achievement of high skilled levels for any sport requires a combination of hard work repetition and practice. The game badminton is no exception. Badminton is a very popular sport and is claimed to be the world's fastest racket sport which involves more skill and technology. Badminton game is suitable for all ages, it helps to build a healthier body and stronger character, broaden the social circle and helps to release stress from daily life³. Mood is proposed to consist of vigour, tension, anger, depression, fatigue and confusion dimensions. Individuals who consistently experience unpleasant mood states following sport performance are likely to develop negative expectations towards playing, which in turn can become demotivational. A recent study confirmed that people with poor mental health report more physical and somatic complaints⁴. Stress leads to mental distress and has negative impact on cognitive functioning and learning. The most common symptoms associated with stress are poor concentrations, headache, restlessness with associated fatigue, lack of sleep, sudden change in mood. Stress during academic career leads to decrease in their psychological health

⁵.Autogenic Relaxation techniques (ART) are likely to produce specific cognitive effects such as reducing anxiety and enhancing positive mood⁶. ART restores the balance between the activity of sympathetic and parasympathetic divisions of autonomic nervous system⁷. Rajyoga meditation is an ART which brings about a proven holistic improvement in overall health, performance levels, relaxation of body and mind. It is the science and art of harmonizing spiritual mental and physical energy through connection with the ultimate source of spiritual energy called the supreme soul. It is the state of soul consciousness and positive life style⁸. Rajyoga meditation of Brahma Kumaris is a behavioural intervention which is simple to practice⁹. Relaxation of body mind with positive approach has been successfully achieved by Rajyoga meditation providing training in realization of true self. Rajyoga is one of the training course of Rajyoga Education and Research foundation of Brahma Kumaris World Spiritual University¹⁰. There still appears limited research regarding the analysis and critical appraisal of tests used specifically for badminton. Although meditation and other relaxation techniques are widely used in sport to enhance performance, it is unclear whether they can be beneficial in assisting those who are playing badminton. Therefore this study intends to check the hypothesis whether Rajyoga meditation has any beneficial effect on general well being of badminton players.

MATERIALS AND METHODS

Institutional Ethical Committee (IEC) Clearance: Approval was obtained from IEC before starting the study.

Study design

Experimental study

Study site

Exercise Physiology Laboratory J.N. M. C, Sawangi, (Meghe) Wardha in collaboration with Rajyoga trainer.

Study population

30 healthy male badminton players (18-25 years since players of this age group exerts more strength, have more will power and courage to get position in the respective teams) were recruited purely on voluntary basis. They were playing badminton daily for one hour since six months.

Study duration

One year.

Selection criteria

Inclusion criteria

1. Badminton players playing at district level.
2. Not received any such relaxation technique prior.

Exclusion criteria:

1. Badminton players suffering from respiratory or cardiovascular disorder were excluded from the study to get uniform normal healthy badminton players only and to record and compare the change in healthy players only
2. If player did not give consent.

Informed consent: Written informed consent was obtained from all badminton players under study. They were reassured that the data obtained would be kept confidential.

Methodology**General well being**

The general well being of badminton players was assessed before and after Rajyoga meditation using WHO QOL health questionnaire. Procedure was followed as per guidelines of WHO. Quality of life is defined by the world health association as a multifactorial variable consists of many components. In order to evaluate these variables we administered the WHO quality of life questionnaire. The questionnaire has been divided into four domains physical health, psychological, social relationship and environment. It contains 24 questionnaires which are sub grouped into above mentioned four domains. Players were asked to score questions from 1-Not at all, 2-A little, 3-A moderate Amount, 4-Very much, 5-An extreme. The sum of all scores gave overall quality of life; the domains were taken into consideration as the study was concerned with overall quality of life¹¹. The parameters were evaluated using SPSS 17.

Intervention

Techniques of Rajyoga meditation were taught to the badminton players and they practiced the same, 5 days/week for 30 min daily morning (6.30 am-7am) for a total duration of one year in a silent dimly lit room. They were also shown pictures, diagrams and audio cassettes related to Rajyoga meditation. Rajyoga trainer had delivered same lesson for eight consecutive days and each lesson lasted for 45 minutes. Out of which last 20 minutes were devoted to a guided commentary¹².

Rajyoga consisted of following 3 steps-

1. Initiation 2. Concentration 3. Meditation.

1. Initiation-The subject sits quietly comfortably and focuses his eyesight on the point of light which represents the supreme power.

2. Concentration- Now he concentrates on the point of light.

3. Meditation-In this stage he meditates on the divine qualities and powers of supreme soul keeping his eyesight fixed on the point of light.

STATISTICAL ANALYSIS

Pre and post values after one year of Rajyoga meditation were compared applying Student's paired 't' test. All the values were expressed as mean and standard deviation (\pm SD). The post intervention findings were found to be statistically significant ($p < 0.05$). The statistical calculations were done using SPSS software version 17.

RESULTS

Well being of badminton players was assessed by WHO-QOL health questionnaire. Four domains of WHO-QOL were assessed pre and post interventional. Domain -1 indicating physical health was seen to be increased from 45.20 ± 4.56 to 66.33 ± 5.51 , Domain -2 indicating psychological health showed a progress from 43.16 ± 4.74 to 66.26 ± 6.05 , Domain 3 indicating social relationship showed improvement from 45.46 ± 8.56 to 61.86 ± 7.93 and Domain-4 indicating environment effects on health showed a progress from 42.40 ± 4.14 to 67.56 ± 4.98 respectively after intervention. Mean and SD was seen statistical significant ($p < 0.05$). Over all baseline values increased from 71.20 ± 2.59 to 94.00 ± 2.94 after Rajyoga meditation.

Table 1
Comparison of domains of WHO QOL pre and post intervention

WHO QOL		Mean	N	Std. Deviation	Std. Error Mean	p-value
Domain-1 Physical Health	Pre Intervention	45.20	30	4.56	0.83	S, $p < 0.05$
	Post Intervention	66.33	30	5.51	1.00	
Domain-2 Psychological Health	Pre Intervention	43.16	30	4.74	0.86	S, $p < 0.05$
	Post Intervention	66.26	30	6.05	1.10	
Domain-3 Social Relationship	Pre Intervention	45.46	30	8.56	1.56	S, $p < 0.05$
	Post Intervention	61.86	30	7.93	1.44	
Domain-4 Environment	Pre Intervention	42.40	30	4.14	0.75	S, $p < 0.05$
	Post Intervention	67.56	30	4.98	0.90	

Interpretation

Mean and SD of four domains of WHO QOL are shown in above table. The post intervention finding was found to be statistically significant ($p < 0.05$).

Figure 1
Comparison of domains of WHO QOL pre and post intervention

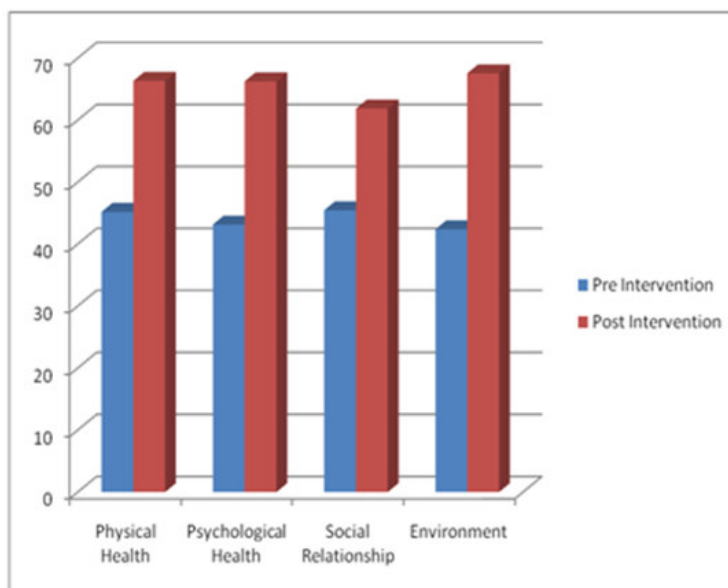


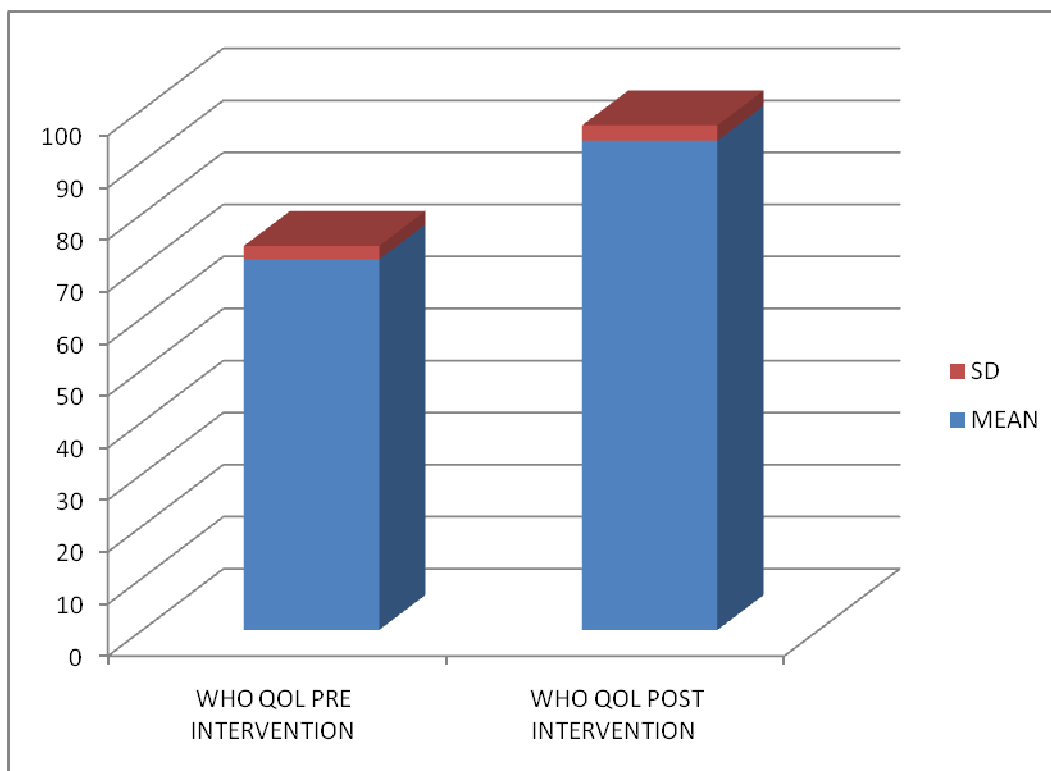
Table 2
Comparison of WHO QOL pre intervention and post intervention

WHO QOL	Mean	Std. Deviation	Std. Error	Mean-value	p-value
Pre intervention	71.20	302.59	0.47		
Post intervention	94.00	302.94	0.53	-28.24	S, p<0.05

Interpretation

Mean and SD of WHO QOL was seen to be increased from 71.20 ± 2.59 to 94.00 ± 2.94 which was statistically significant (p<0.05).

Graph 2
Comparison of WHO QOL pre intervention and post intervention



DISCUSSION

The study attempted to evaluate the effect of Rajyoga meditation on badminton players general well being. Well being of badminton players in the present study was assessed by WHO-QOL health questionnaire. Results clearly showed significant improvement in all the four domains of WHO-QOL after one year of Rajyoga meditation (Table 1 and graph1). The increased post intervention values of WHO QOL in badminton players may be due to meditation causing release of stress and allowing mind to calm down to its basal states due to modulation of autonomic output by maintaining balance between sympathetic and parasympathetic components of autonomic nervous system^{13,14}. Rajyoga Meditation is the science and art of harmonizing spiritual mental and physical energy through connection with the ultimate source of spiritual energy called the supreme soul. It is the state of soul consciousness and positive life style¹⁰. Meditation technique is normally used in sports for the purpose of upgrading the rate of recovery after exercise or enhancing performance by improving the handling of anxiety pressure. Its possible effect on sports performance, however, has not been well investigated. In our present study pre intervention results showed decreased WHO-QOL values (Table 2, Graph 2) which could be attributed to stress or anxiety. Similar results were observed by Kumar R, et al. 2013 who compared the effect of stress and anxiety among sportsmen and non sportsmen. 80 subjects of 18-25 years age group were studied and pre-competitive anxiety was observed in sportsmen as compared to non sportsmen¹⁵. Srilekha S in year 2015 did a study to identify the relationships between different emotional feelings; mood states and associated psychobiological changes pertaining to inner emotional core of soccer players. Study was performed on one-hundred and eighteen soccer players. They observed that both negative and positive mood states are associated with emotional integrity of soccer players¹⁶. Several other studies had reported that athletes have pre-competitive anxiety as per Hinton, et al. 2004 observed in his study that players usually have a low self confidence before a championship¹⁷. Findings of study done by Biswajit S, et al. 2009 in 108 participants between 14-17 years of age found that mental skills and anxiety are related to each other¹⁸. Post intervention increase in values of WHO-QOL four domains of our study (Table1 & Graph 1) suggests positive co-relation exists between mental health of badminton players and Rajyoga meditation. Similar observation was reported by Shivesh S, et al. 2010, Kushwah D, et al. 2012 in their study^{19,20}. Our findings are in agreement with Santaella DF, et al. 2011 who observed an increase in post intervention WHO QOL health questionnaire values in 76 healthy subjects after 4 months yoga training²¹. Yoga acts as a stress reliever by having profound effect on the autonomic nervous system as per Sinha S, et al. 2007 by parasympathetic predominance and relatively reduced sympathetic tone. This autonomic modulation in yoga is mediated through modifications of various central and autonomic mechanisms¹⁹. Lehrer, et al. 1996 and Hashim HA, et al. 2011 observed that ART were

effective in reducing symptoms as well as intensity of anxiety and depression in players^{22,23}. Our study results (Table2, graph 2) are in accordance with a study conducted by Bhimani NT, et al. 2011 who found reduced mental stress levels after 2 months of practicing various pranayama in medical students as evident by decrease in total stress score. Reduced stress score were attributed to a better sympathovagal balance with resting balance tilting towards better parasympathetic control. Hence they concluded practice of yoga can increase parasympathetic outflow and decrease sympathetic outflow²⁴. The significant positive effect of ART on cognitive anxiety of athletes is in agreement with several other reports in literature as by Hale and Whitehouse, et al. 1998, Pavlidou and Doganis, et al. 2008 and Mohamed A, et al. 2013^{25,26,27}. Positive effect of yoga on state of well being in 30 physiotherapy students of the age group 18 - 22 years were also observed by Akhtar P, et al. 2013²⁸. As per our present study results the concept of improvement in well being of badminton players is important stress modulator in sports medicine. Further scientific focusing on stress management techniques should be done in sports with the ultimate aim of preventing overtraining, balancing stress reactivity and facilitating recovery.

LIMITATIONS

In present study female badminton players were not evaluated due to inconsistency in their playing habits and also insufficient number of these players in such small town.

CONCLUSION

Outcome in this study clearly demonstrated significant improvement in well being of badminton players as assessed by WHO QOL health questionnaire. The findings suggest that Rajyoga meditation could not only be used as adjunct for improvement in badminton players performance but also potentially may have impact on players health via reduction of stress. In light of these facts, meditation can become the most important way of lifestyle intervention and physical activity for prevention of many diseases as prescribed by World Health Organization. Therefore it can be deciphered from our study that Rajyoga meditation is associated with significant improvement in general well being of badminton players. It is simple, easy to perform without any side effects and leads to deep physical and mental relaxation.

SUGGESTIONS

Considering above benefits Rajyoga meditation can be advocated to badminton players for improvement of general well being.

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