

A Study on the Effect of Selected Yogic Training Programme on Pittsburgh Insomnia Rating Scale Hindi Version of Female Judo Players



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Abstract

Objectives of the study were (1) To determine insomnia rating scale after normal training (not very high intensity or volume) for duration of one month till the competition of female judo players' age ranging from 17 to 23 years (2). To find out the effect of yogic training program on insomnia rating scale just two or three days before the competition of female judo players' age ranging from 17 to 23 years. The study was delimited to sixty female judo players' age ranging from 17 to 23 years. Sleep quality index will be studied using Pittsburgh Insomnia Rating Scale Hindi translation/adaptation i.e. PIRS-Hindi.

Keeping in view the purpose of the study, a large number of female judo players were randomly selected (N=60) equally divided into experimental group and control group. The corresponding experimental and control group were homogeneous/matched groups in regard to age and sex. The experimental groups were treated with yogic training programme for 30 to 45 minutes progressively, for six days per week, for six weeks, whereas the control groups were not given any treatment. The selected variables were distress score (DS), sleep parameter (SP), quality of life (QL) and total score (TOT).

Conclusions:

- Experimental group and control group were not significantly different in pretest in regard to selected variables of insomnia rating scale hence considered as homogeneous group for experimentation.
- There was negative effect of judo competition on insomnia rating scale (just two or three days) before the judo competition.
- There was significant difference between the experimental group (trained with selected yogic training programme) and control group (not trained with selected yogic training programme) just two or three days before the competition in regard to selected variables of insomnia rating scale.
- There was significant positive effect of yogic training programme on insomnia rating scale just two or three days before the competition of female judo players age ranged from 17 to 23 years.

Keywords: PIRS; Sleep parameter; Distress score; Quality of life

Introduction

Yoga is derived from "Yuj", in verb form which means to unite or to join. Yoga in its noun form and means union. It is concerned with the union of the individual source with the absolute or divine soul. It is a science of development of man's consciousness. Yoga is the "unification of Atma with Parmatma".

It also means the unification of physical, mental, intellectual and spiritual aspects of human being [1].

Pranayama is the regulation of breath or control of prana that is the stoppage of inhalation and exhalation, which Pranayama is the controlled process of breathing or regulation of breath/

energy. It means the appropriate control over inhalation and exhalation. Basically there are three constituents of pranayama i.e. puraka (inhalation), kumbhak (retaining the breath) and rechaka (exhalation). There are various types of Pranayamas such as ujjai, anuloma viloma, suryabhedhi, sheetkari, sheetali, bhastrika, bhramari, murchha and plavini. It has been proved that pranayama is a very important way for preventing and curing many problems. Pranayama brings several physiological changes in the body. The science of pranayama helps in reducing the respiratory and heart rate, while increasing the quantum of oxygen drawn in and decreasing the outflow of breath. This can be as minimal as two or three cycles per minute. When the respiratory rate goes down then metabolic rate of the body also decreases. The problem of allergic rhinitis, low and high blood pressure, sinusitis, recurrent infections of the upper respiratory tract, vasomotor rhinitis, chronic headaches, migraine, peptic ulcers and anxiety states can all be treated by practice of many kinds of pranayama [2].

There are different types of pranayama namely Suryabhedhi, Anulom-Viloma, Ujjayi, Sitkari, Sitali, Bhastrika, Bhramari, etc. we selected Anulom Vilom Pranayama Inhalation called puraka, retention called kumbhaka and exhalation called rechaka is used in the pranayama. Anulom Vilom pranayama can be practiced with kumbhak or without kumbhaka means holding of the breath. In Anulom Vilom pranayama, breathing is done through one nostril then it is alternated. During anulom vilom pranayama right nostril is close with thumb and the left nostril is close with ring finger [3].

It has been proved through reviews that pranayama is an important mean for preventing and curing of many diseases. Pranayama brings about several physiological changes in the body. The pranayama helps in reducing the respiratory and heart rate, while increasing the volume of oxygen in and decreasing the outflow of the breath. This can be as minimal as two or three cycles per minute. When the respiratory rate is thus lowered, the metabolic rate of the body also reduces. All the cells are in rest and relaxed. The sympathetic overdrive is reduced, with consequent energy conservation and also helps in improving sleep [2].

Sleep is one of nature's greatest invention and blessings of life. It is a periodic rest of the body which is absolutely essential for its efficient functioning. It has been called "most cheering restorative of tired bodies". Sleep is the indispensable condition to the recuperation of energy. We go to bed fatigued and get up refreshed. Sleep repairs the wear and tear of the body and mind incurred during waking hours. Nothing is so restorative to the nerves as sound and uninterrupted sleep. Sleep is thus a vital element in a total way of life. It is a basic need in man's mental as well as physical life. During sleep most of the functions of

the body are carried on at the lowest level possible in health. Heat production is from 10% to 15% below the basal level. The mechanisms regulating the body temperature are less sensitive than in the waking state and are depressed by 0.5 to 1.0 degree F. The rate of heart is reducing by 10 to 30 beats per minute and a decline in blood pressure of about 20mm/hg occurs in quite restful sleep. The urine volume is considerably reduced but its concentration in solids is increased. The tone of all the skeletal muscle is lessened. The eyes are usually rolled upward and the pupils constricted. Loss of sleep exerts seriously detrimental effects upon the nervous system. Long period of wakefulness may cause profound psychological changes such as loss of memory, irritability, hallucination and even schizophrenic manifestations [4].

According to the principles and practice of Sleep Medicine, "Sleep is a reversible behavioral state for sustained immobility and perceptual disengagement from the environment or we can say that unresponsiveness to the environment". Sleep is typically (but not necessarily) accompanied by postural recumbence, closed eyes, behavioral quiescence and other indicators commonly related with sleeping [4]. Insomnia or Sleeplessness has assumed alarming proportions in present time. This is evident from the wide range of medication for this condition described by physicians and sold by chemist. Insomnia deprives a person of mental rest and thereby interferes with his activities in the daytime. It constitutes severe health hazard when it becomes a habit.

Objectives of the Study

- To determine insomnia rating scale after normal training (not very high intensity or volume) for duration of one month till the competition of female judo players age ranging from 17 to 23 years.
- To find out the effect of yogic training program on insomnia rating scale just two or three days before the competition of female judo players age ranging from 17 to 23 years.

Delimitations of the Study

The study was delimited to sixty female judo players age ranging from 17 to 23 years. Sleep quality index will be studied using Pittsburgh Insomnia Rating Scale Hindi translation/adaptation i.e. PIRS-Hindi.

Hypotheses of the Study

- It was hypothesized that there will be negative effect on insomnia rating scale just two or three days before the competition of female judo players age ranging from 17 to 23 years.
- It was hypothesized that there will be positive effect of selected yogic training programme on insomnia rating scale

just two or three days before the competition of female judo players age ranging from 17 to 23 years.

Selection of Subjects and Variables

Keeping in view the purpose of the study, a large number of female judo players were randomly selected (N=60) equally divided into experimental group and control group. The corresponding experimental and control group were homogeneous/matched groups in regard to age and sex. The experimental groups were treated with yogic training programme for 30 to 45 minutes progressively, for six days per week, for six weeks, whereas the control groups were not given any treatment. The selected variables were distress score (DS), sleep parameter (SP), quality of life (QL) and total score (TOT).

Administration of Tests and Collection of Data

a) PIRS-Hindi was administered (after determining its scientific authenticity) to determine the insomnia rating scale after normal training of female judo players age ranged from 17

Table 1: Time allocation for different phases of training.

Duration	Phase	Training Components
10 minutes	Preparatory Phase	Attendance Body Stretch-upwards and sideward, Neck Exercise, Shoulder Rotations, Hamstring and Quadriceps Stretches, Hip Circumduction, Five Deep Breathing, Five Om Recitations
Initially fixed for 30 minutes depending upon the adaptations, session was increased to 45 minutes	Main Phase	Anulom-Vilom Pranayama Om Chanting
10 minutes	Final Phase	Shavasana, Feedback/conclusions

Statistical Analysis of Data

Following statistical techniques were administered:

- a) Descriptive Statistics (Mean and Standard Deviation)
- b) Analysis of Variance

Table 2: Descriptive statistics of PIRS.

S.No	Variables	EPRT Mean+SD	EPOT Mean+SD	CPRT Mean+SD	CPOT Mean+SD
1	DS	42.000+7.497	36.633+9.0686	43.500+6.877	67.667+10.742
2	SP	7.667+1.322	5.900+1.826	7.733+1.285	9.667+0.884
3	QL	5.433+1.888	8.700+1.317	5.800+1.827	8.933+1.172
4	GS	55.100+7.508	51.233+9.964	57.033+7.402	86.267+10.815

Note: EPRT: Experimental Group Pre test (N1=30).
 EPOT: Experimental Group Post Test (N2=30).
 CPRT: Control Group Pre Test (N3=30).
 CPOT: Control Group Post Test (N4=30).
 SD: Standard Deviation.

years to 23 years.

b) The PIRS-Hindi was administered to determine the insomnia rating scale just two or three days before the competition of female judo players age ranged from 17 years to 23 years

c) Experimental group and control group were selected randomly and were administered with PIRS-Hindi as pretest and there after the experimental groups was administered with selected yogic training programme after six weeks of training the post test was conducted by administering PIRS-Hindi to determine the insomnia rating scale of both the groups i.e. control group and experimental group then both the groups were compared between pretest and post test score of each group as well as between the groups

Training Schedule

(Table 1)

c) Post hoc Analysis

The drawn hypothesis was tested at 0.05 level of significance.

Findings of the Study

(Table 2) The descriptive statistics of PIRS have been graphically illustrated in (Figure 1-4) (Table 3 & 4)

Table 3: Analysis of variance of PIRS.

Variables		Sum of Squares	Df	Mean Square	F	Sig.
DS	Between groups	17130.567	3	5710.189	75.847	.000
	Within groups	8733.133	116	75.286		
	Total	25863.7	119			
SP	Between groups	213.092	3	71.031	37.813	.000
	Within groups	217.9	116	1.878		
	Total	430.992	119			
QL	Between groups	310.033	3	103.344	41.29	.000
	Within groups	290.333	116	2.503		
	Total	600.367	119			
TOT	Between groups	23292.092	3	7764.031	94.854	.000
	Within groups	9494.9	116	81.853		
	Total	32786.992	119			

N1+N2+N3+N4=N=120

Table 4: Post hoc tests of PIRS.

Variable	Group				Mean Difference	Std. Error	Sig
	1	2	3	4			
DS	1	2					
	1	2			5.367*	2.24	0.018
	1		3		-1.5	2.24	0,504
	1			4	-25.667*	2.24	0
		2		4	-31.033*	2.24	0
SP			3	4	-24.167*	2.24	0
	1	2			1.767*	0.354	0
	1		3		-0.067	0.354	0.851
	1			4	-2.000*	0.354	0
		2		4	-3.767*	0.354	0
QL			3	4	-1.933*	0.354	0
	1	2			-3.267*	0.408	0
	1		3		-0.367	0.408	0.371
	1			4	-3.500*	0.408	0
		2		4	-0.233*	0.408	0.567
TOT			3	4	-3.133*	0.408	0
	1	2			3.867*	2.336	0.101
	1		3		-1.933(N.S.)	2.336	0.41
	1			4	-31.167*	2.336	0
		2		4	-35.033*	2.336	0
		3	4	-29.233*	2.336	0	

Note: N=120; 1=Experimental Pretest Group, 2=Experimental Post Test Group, 3=Control Pretest Group, 4=Control Post Test Group.

*The mean difference is significant at the 0.05 level.

N.S.= Not significant at 0.05 level.

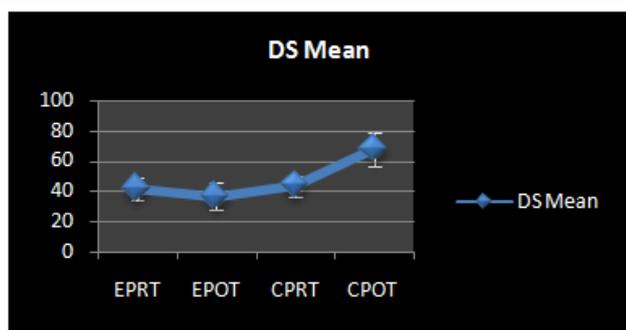


Figure 1: Mean+SD of distress score (PIRS).

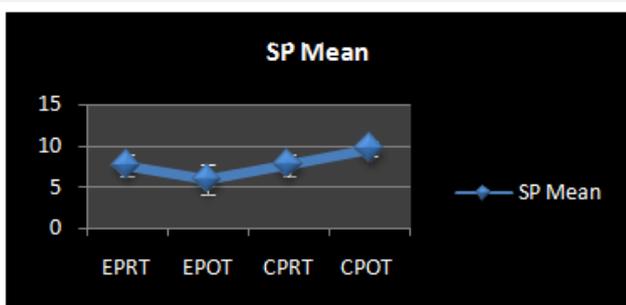


Figure 2: Mean+SD of sleep parameter (PIRS).

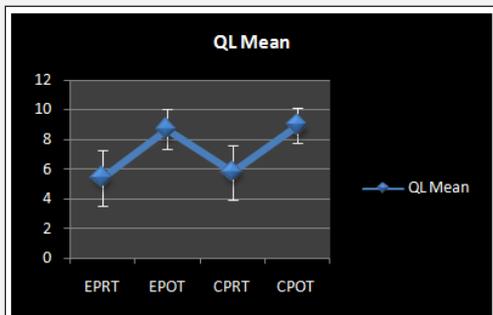


Figure 3: Mean+SD of quality of life (PIRS).

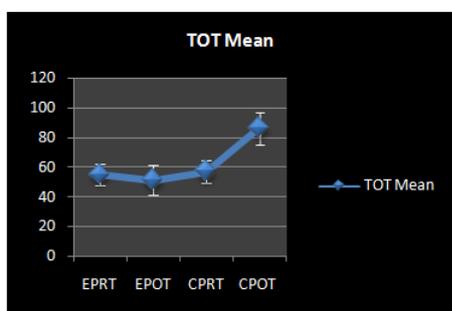


Figure 4: Mean+SD of total score

Discussion of Findings

In Post Hoc Analysis (LSD Multiple Comparisons) of Hindi Version of PIRS (sixty five items), in regard to variables namely

DS, SP, QL and TOT, experimental pre test group and control pre test group were homogeneous, experimental post test group and control post test group were significantly different which means judo competition less negative effect on the experimental group due to yogic training programme as compared with control group and control pre test group and control post test group were significantly different, showed the negative effect of judo competition.

There are many researches which shows the effect of physical training or exercise on sleep [5-10]. Such analysis was created a baseline data to understand the research outcomes. Many researches were done which shows the negative effect of competition on the mental health, physical health and sleep of sports persons. Many researches were done which shows the positive effect of yogic training programme on the mental health, physical health and sleep of sports persons [11-28].

Conclusion

- A. The findings have been comprehensively and critically appraised to draw the following conclusions.
- B. Experimental group and control group were not significantly different in pretest in regard to selected variables of insomnia rating scale hence considered as homogeneous group for experimentation.
- C. There was negative effect of judo competition on insomnia rating scale (just two or three days) before the judo competition
- D. There was significant difference between the experimental group (trained with selected yogic training programme) and control group (not trained with selected yogic training programme) just two or three days before the competition in regard to selected variables of insomnia rating scale.
- E. There was significant positive effect of yogic training programme on insomnia rating scale just two or three days before the competition of female judo players age ranged from 17 to 23 years.

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