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Effect of Yogasana Training on Low Back Pain among College Players

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Abstract: *The subjects of the study were 40 students from SGGS Khalsa College Mahilpur, District Hoshiarpur, India and the subjects were divided into two groups. One control group and one experimental group. Ayurvedic massage training for 3 month was assigned to experimental group (5 days a week) and control group was not allowed to undergo any experimental treatment, but they are permitted to do their daily routine work. From the selected subjects (N=40) pretest (initial) and post test (after training) was conducted on the criterion measures (Sit and Reach Test, Trunk Extension Test, Bridge Up Test, Sit Up Test and assessment of pain through visual analogue) at the start and the end of the experimental training programme. The data pertaining to selected hematological variables were analyzed by t- ratio to determine the difference between initial and final mean for control group and experimental group. The significant difference was seen at 0.05 level of confidence (0.05 = 4.096). The study concluded that there is a significant improvement in reducing the low back pain due to Ayurvedic massage training programme.*

Key Words: *Yoga, Flexibility, Sit Up, Bridge Up, Visual Analogue*

I. Introduction

Sports are a worldwide phenomenon today. History reveals that sports were never so popular, organized and important as today. There are numerous federations, which organized sports competitions, every year at various levels and also encourage participation in sports by providing technical and material facilities. In performance sports, competitions provide the means by which one can show one's worth by competing successfully. Consequently sports competitions have triggered off vigorous competitions in research on sports physiology, sports psychology, sports training, sports nutrition and sports medicine. Competitive sports have broad into sharp focus many methods for improvement and achieving high level performance. Sports performance not only denotes the psychomotor capacity of individual sportsman but also gives expression of the overall efficiency of a nation and society. The country which wins greater number of medals in Olympics have better political, social and cultural conditions which are indispensible for producing world champions.

Low Back Pain And Athlete:

Low back pain is an extremely common entity in the general population. Athletes are no different in their affiliation for suffering low back pain and injuries, particularly in sports that caries specific low back demands. Whilst traditionally low back pain in the non athletic population has been thought of a term of being acute or chronic in nature, recent long term epidemiological study have suggested there is a need to revise views regarding the natural history of low back pain. Low back pain is not simply either acute or chronic but fluctuates overtime with frequent recurrences or exacerbations and should not be considered self limiting. The natural history of low back pain in athlete is most probably no different. The very nature of athletic preparation requires mechanical overload. Athletic maneuver produced significant compressive forces directed at the lumbar spine. A trade off is likely to exist between athletic demands and injury, with greater duration of training, training intensity and the lack of relative rest occurring at the expense of tissue overload and ongoing injury. These may explain why some athletes tend to have more persistent, chronic and recurrent low back symptoms, frequently associated with early degenerative joint disease.

Healing Benefits Of Yoga:

Yoga strengthens muscle groups, many postures in yoga strengthen the back and abdominal muscles and help the body maintain a proper upright posture and movement. Stretching and relaxation reduces tension in stretch caring muscles. When these muscles are well conditioned, it helps to offset back pain. Yoga eases lower back pain by stretching and strengthening the muscles of the lower back. It increases blood circulation, which brings healing nutrients to the injured tissues. Yoga also helps to maintain a natural curvature of the spine that is crucial in avoiding lower back pain. Thus, yoga is an excellent therapy for healing injured and sore back muscles, speeding time to recover from an injury and preventing re-injury. It also reduces the risk of disability due to back pain. In short, yoga increases awareness of the body and keeps the body healthy and supple.

Statement of the problem:

The purpose of the study was to determine the effect of yoga asana training on low back pain among university players.

Hypotheses:

With available facts on the problem chosen for study, it was hypothesized that trained subjects would indicate a reduced low back pain after the treatment programme when compare with the untrained subjects.

Materials And Methods:

Selection Of Subjects:

Forty healthy boys students volunteered to participate in the study. The subjects were selected from the SGGS Khalsa College Mahilpur, District Hoshiarpur, India. The aged ranged from 18 to 28 years.

Selection Of Variables:

The investigator received the available scientific literature and on the basis of discussion, which reports feasibility, availability of instruments, equipments and the relevance of the variables to the present study the following variables were selected.

1. Sit and Reach test. 2. Trunk Extension test. 3. Bridge up test. 4. Sit Up test.
5. Assessment of pain through visual analogue.

Training Programme:

The subjects were training five days per week. The training programme was periodized for intensity and volume of training by using progressive load method and varied rest period and important to note is that non of subjects were performing any other strenuous activities out site of their experimental training programme.

Experimental Design:

All subjects were exposed to the experimental training programme, assigned to them. The controlled group is not undergoing any treatment condition. In this study a balanced random group design was used. The duration of the treatment was three weeks. Initially the subjects were divided into two equal groups in a number of 20 each. The experimental group receiving Ayurvedic massage treatment programme, and the controlled group did not involved any training programme.

II. Data Collection And Analysis:

Before the starting experimental training programme all the subjects had undergone an initial test on selected variables (Sit and Reach test, Trunk Extension test, Bridge Up test, Sit Up test and assessment of pain through visual analogue). After three weeks of training programme again all the subjects were tested the selected variables.

Statistical Analysis:

A statistical analysis of the data was accomplished by using t-ratio. Level of significance for this investigation was set at 0.05 level of confidence.

Table -1: T-ratio of Sit and Reach Test

Group	Test	Mean	SD	SE	T	2- tailed significance
Group I	Pre test	8.1510	1.59222	.35603	9.203	.000
	Post test	8.6484	1.40516	.31420		
Group II	Pre test	7.5415	1.95277	.43665	2.035	.056
	Post test	7.9040	1.67655	.37489		

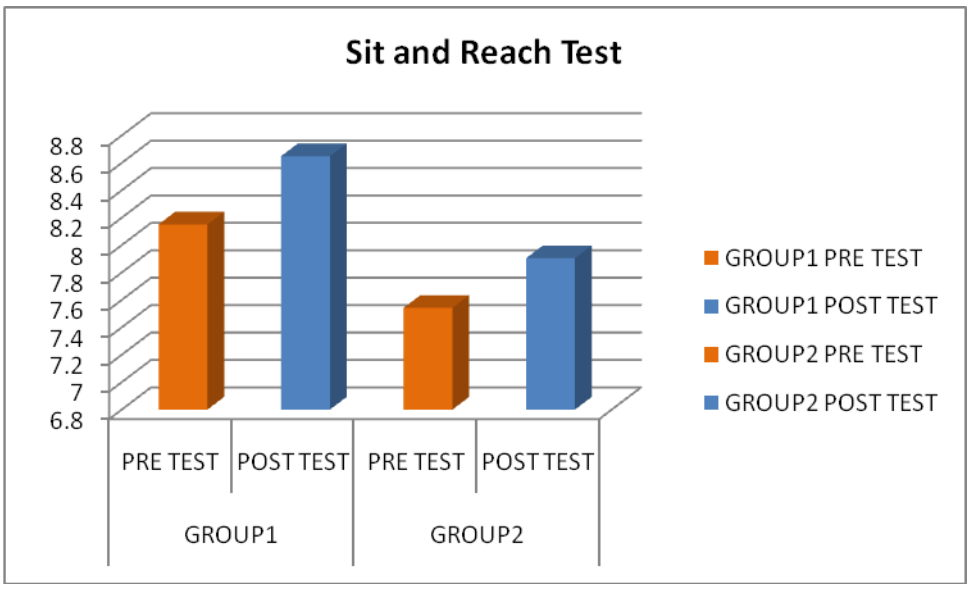


Table -2: T-ratio of Trunk Extension Test

Group	Test	Mean	SD	SE	T	2- tailed significance
Group I	Pre test	7.7000	1.12858	.25236	12.706	.000
	Post test	9.6500	.67082	.15000		
Group II	Pre test	7.6500	1.38697	.31014	9.903	.000
	Post test	9.3000	1.03110	.23056		

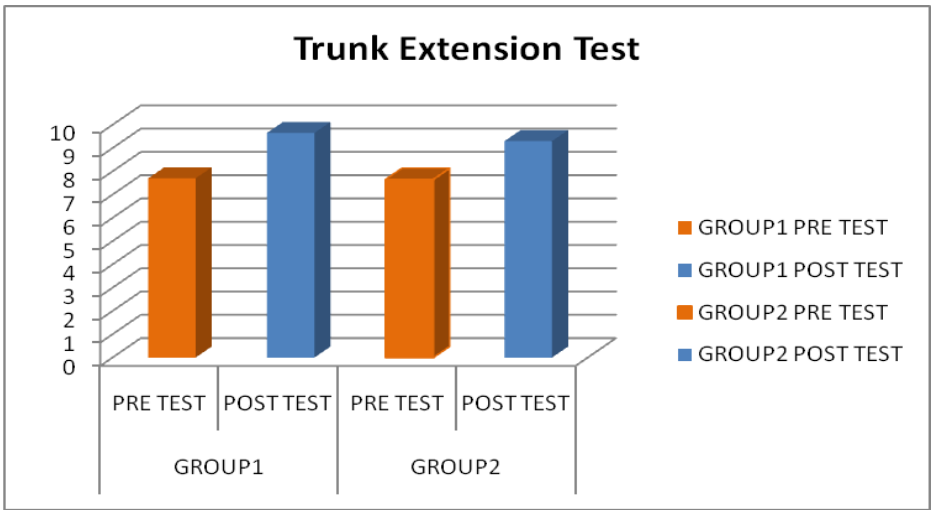


Table -3: T-ratio of Bridge Up Test

Group	Test	Mean	SD	SE	T	2- tailed significance
Group I	Pre test	14.200	1.151	.25752	22.584	.000
	Post test	12.350	1.136	.25418		
Group II	Pre test	14.700	0.9233	.20647	17.616	.000
	Post test	12.950	1.050	.23480		

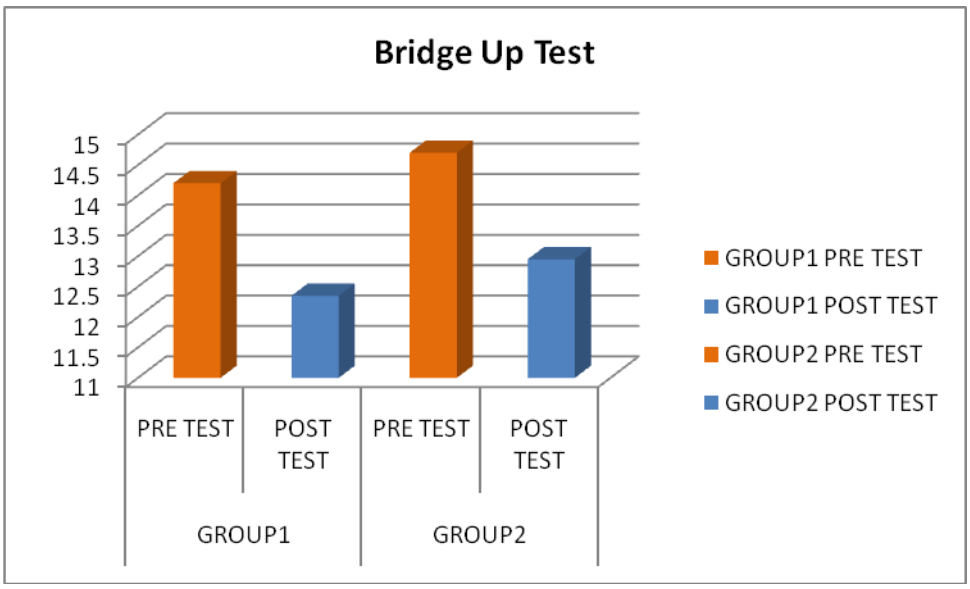


Table -4: T-ratio of Sit UpTest

Group	Test	Mean	SD	SE	T	2- tailed significance
Group I	Pre test	3.5000	1.39548	.31204	10.510	.000
	Post test	4.6500	1.34849	.30153		
Group II	Pre test	3.6000	1.09545	.24495	10.177	.000
	Post test	4.9000	1.02084	.22827		

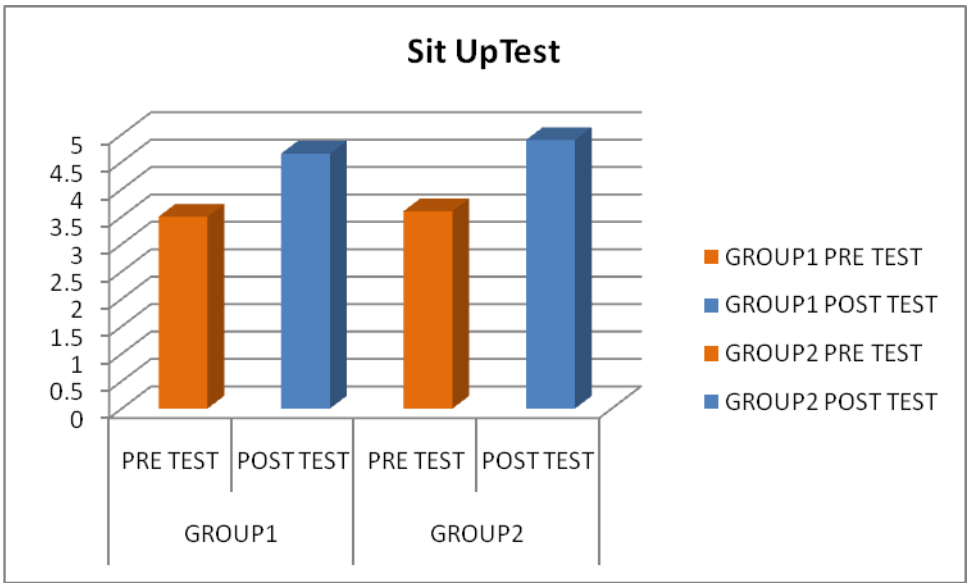
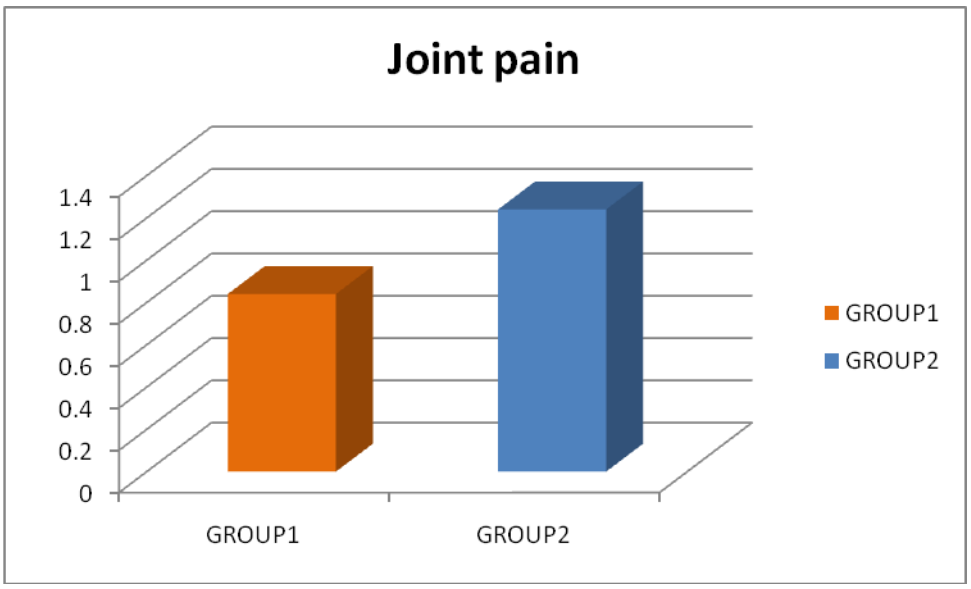


Table -5: Showing the effect of treatment in all four groups in terms of Sandhishu Ruka (joint pain)

Group	Mean	SD	SE	t	2- tailed significance
Group I	0.8400	0.473	0.095	8.89	0.000
Group II	1.2400	0.723	0.145	8.57	0.000



III. Discussion

Mode of action of Yoga Asana

Yoga is a form of mind body fitness that involves a combination of muscular activity and internally directed mindful focus on awareness of the self, the breath, and the energy. Four basic principles underline the teaching and practices of yoga's healing system. The first principle is the human body is holistic entity comprised of various interrelated dimensions inseparable from one another and the health or illness of anyone dimension affects the other dimension. The second principle is individuals and their needs are unique and therefore must be approached in a way that acknowledges this individuality and their practice must be tailored accordingly. The third principle is yoga is self empowering the students is his or her own healer. Yoga engages the students in the healing process by playing an active role in their journey towards health, the healing comes from within instead of from an outside source and a greater change of autonomy is achieved. The forth principle is that the quality and state of an individual mind is crucial to healing. When the individual has a positive mind state healing happens more quickly, whereas the mind state is negative healing may be prolonged.

Therapeutic yoga is defined as the application of yoga posture and practice to the treatment of health condition. Yoga therapy involves instruction in yogic practices and teaching to prevent reduce or alleviate structural, physiological, emotional and spiritual pain suffering or limitations. Yogic practices enhance muscular strength and body flexibility promote and improve respiratory and cardiovascular function, promote recovery from treatment of addiction, reduces stress, anxiety, depression and chronic pain, improve sleep pattern and enhance overall wellbeing and quality of life.

Improved flexibility is one of the first and most oblivious benefits of yoga. With condition practice comes a gradual loosening of the muscle and connective tissues surrounding the bones and joints, this is thought to be one reason that yoga is associated with reduced acts and pain. Yoga helps to build muscle mass and maintain muscle strength which protects from condition such as Arthritis, Osteoporosis and back pain. Dealing a yoga session the joints are taken through their full range of motion, squishing and soaking areas of cartilage not often used and bringing fresh nutrients, oxygen and blood to the area, which helps to prevent conditions like Arthritis and chronic pain. Without proper sustenance neglected areas of cartilage will eventually wear out and exposed the underline bone. Numerous studies have shown that asana, meditation or a combination of the two reduced pain with Arthritis, carpel tunnel syndrome, back pain and other chronic conditions. Yoga also increased proprioception and improve balance.

Yoga increases blood flow and levels of hemoglobin and red blood cells which allows to reach more oxygen to the body cells enhancing their function. Twisting poses bring out venous blood from internal organs and allowed oxygenated blood to flow in when the twist is released. Inverted poses encourage venous blood flow from the legs and pelvis back to the heart and then pumped through the lungs where it becomes freshly oxygenated. Many studies show yoga lowers the resting heart rate, increases endurance and can improve the maximum uptake and utilization of oxygen during exercise.

Numerous studies show that asana can reduce pain and disability while improving flexibility and functional mobility in people with number of conditions causing chronic pain. Additionally, in some cases use of pain medication was reduced or eliminated completely. Yoga was also shown to improve gait function and reduced age-related changes in gait among a group of healthy, non-obsess individual.

Effects of pain reduction have been observed by Garfinkel et al. in a randomized controlled trail on yoga for carpal tunnel syndrome. Tekaur et al. studied the efficacy of the integrated approach of yoga therapy in patients with chronic low back pain and documented 48.8 % reduction in Numerical Rating Scale scores in the yoga group. Garfinkel et al. studied the effects of Iyengar yoga in patients with OA bands and found a better reduction in the pain during activity. Yogitha et al. showed reduction in pain and tenderness in patients with common neck pain after integrated yoga.

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