



EFFECTS OF YOGA IN TREATING CHRONIC LOW BACKACHE AMONG DENTIST IN DARBHANGA DISTRICT, BIHAR, INDIA: AN ORIGINAL RESEARCH

Oral Medicine

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ABSTRACT

The development of India will be possible only if each and every person is mentally and physically fit because a healthy mind resides in a healthy body. It is very necessary for everybody to be healthy at every point of life, Dentists / Oral & Maxillofacial Health Care Professionals also comes under it. The Dentist gets very tired throughout day as their functioning system is very complicated, whether it is a 3rd molar extraction surgery, root canal treatment, a maxillofacial surgery or an orthodontic treatment, all Dentists work for many hours. Sometimes Dentists work for long hours in standing or either bowing postures due to which there is danger of low backache. In today's health department, every professional is suffering from such problems.

KEYWORDS

Yoga; Dentist; Backache.

INTRODUCTION:

Yoga is a physical, mental and spiritual practice or discipline which originated in India. In vedic Sanskrit yoga means "to add" "to unite" or to attach in its most common literal sense¹. Humans are with 33 separate vertebrae. By adulthood, most have only 24, due to the fusion of the vertebrae in certain parts of the spine during normal development. The Lumbar spine consists of 5 vertebrae called L1 through L5. Below the triangular bone called the sacrum. The two dimple in most person's back (historically known as the "dimples of Venus") are where the sacrum joints the hipbones, called the sacroiliac joint. The lowest four vertebrae form the tail bone or coccyx. The anatomy of the spinal column is extremely well designed to serve many functions. All of the elements of the spinal column and vertebrae serve the purpose of protecting the spinal cord, which provides communication to the brain mobility and sensation in the body through the complex interaction of bones, ligaments and muscle structures of the back and the nerves that surround it. The back is also the powerhouse for the entire body, supporting our trunks and making all of the movements of our head, arms, and legs possible.

Of the many occupational hazards that a dentist is exposed to musculoskeletal disorder may be considered as one of the most important hazards that a dentist is prone to. Studies have shown that dentist report more frequent and worse health problem² particularly musculoskeletal pain³. William et al found that Yoga significantly improved functions and reduced pain in participants with chronic low back pain and showed significant improvement in pain related outcomes, pain intensity, functional disability, depression and pain medication usage⁴.

DEFINITION:

Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.

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Pain protects the individual by motivating the individual to withdraw from damaging situations and to avoid similar experiences in the future. Most pain resolves after the removal of noxious stimulus and after body has healed, but in some cases pain may persist after the removal of the stimulus and apparent healing of the body.

Low backache is extremely prevalent, and is the second most common reason for the people to seek medical attention. Low back pain accounts for approximately 15% of the sick lives, and is the most common cause of disability in persons less than 45 years of age. The annual incidence of low backache is 5%. The prognosis for most cases of low backache is good, and improvement usually occurs with little or no medical intervention.

AIM AND OBJECTIVE

AIM:

To Study the effects of Yoga in treating chronic low backache in Dentist

OBJECTIVE:

To study the effects of Pavanmuktasan, Bhujangasana, Naukasana, Shalabhasana, Shavasana on pain and strength of back muscles

INCLUSION CRITERIA:

Dental Surgeon age between 25 years to 50 years in Darbhanga district, in Bihar, India

EXCLUSION CRITERIA:

- Any inflammatory changes or known cause of degenerative changes of spine, hip and knee (TB, ankylosing spondylitis)
- Any spinal congenital causes (spinal bifida, scoliosis, and spondylolysis)
- Any History of Trauma to the spine (vertebral fractures, prolapsed disc)
- Any recent abdominal or spinal surgeries

- Any acute gastrointestinal disorders (Peptic ulcer, Hernia)
- Any neurological problems
- Any form of fitness regime during twelve weeks of yoga session
- Any Gynecological problems (PCOD, Liqueorea)

METHODOLOGY

This study focuses on how effective can yoga be used for treating chronic low backache in Dentist aged between 25-50 years. We have interviewed all the Dentist before and after the yoga session that were carried out for twelve weeks. Data were filled by Dentists. Yoga asanas (Pavanmuktasana, Bhujangasana, Naukasana, Shalabhasana) were taught to the Dentist that were carried out for twelve weeks. Dentist were instructed to start with Pavanmuktasana in supine position which is warm up type of yoga asana followed by Bhujangasana, Naukasana, Shalabhasana done in prone position which helps in strengthening the back muscles. Shavasana was given towards the end which is a relaxative type of yoga asana. Initially starting from 3-5 repetitions till eight weeks then progression to 8-10 repetitions till twelve weeks. Instructions were given to the Dentists.

SAMPLE SIZE:

Fifty Dentists of Darbhanga District in India

MATERIAL USED:

Questionnaire

QUESTIONNAIRE

1. Personnel details:

- (a) Name
- (b) Age
- (c) Sex
- (d) Height.....
- (e) Weight
- (f) Married/Unmarried
- (g) Working time table – Morning Evening
- (h) Nature of job:- Academic/Clinical

2. Since how long have you been suffering from low backache?.....

3. Pain history

- (i) Numerical pain scale
1 2 3 4 5 6 7 8 9 10
Post Yoga
1 2 3 4 5 6 7 8 9 10
- (ii) Type of pain Central/ Peripheral/ Radiating/ Referred
- (iii) Aggravating factors Relieving factor

4. Personal history:

Sleep Appetite
Bowel/ Bladder
Past medical history (DM, HT, TB, Asthma)
Post-Surgical history (Any abdominal, spinal surgeries gynecological,) and other

5. Any you suffering from any mental stress?

Yes No

6. Do you have dental auxiliary or supporting staff in your clinic

Yes No

7. What do you do for your low backache?

Medication/ Hot packs/ Other

8. Have you been previously involved in any kind of sport/ Dance/ Any other form of fitness regime?

9. What is the difference you notice in your pre and post yoga work efficiency? (clinical work and others)

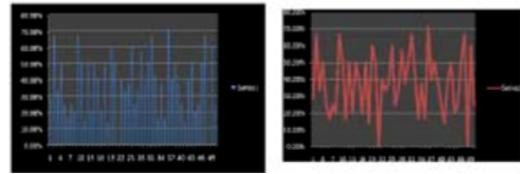
10. VAS analysis of treatment of low backache.



98 days
11. Result:
Mild – 1 to 3
Moderate – 4 to 6
Complete – 7 to 10

RESULTS

Category of Doctor	Number of Doctor
0% to 24% Benefited	12 Doctor
25% to 49% Benefited	19 Doctor
50% to 74% Benefited	19 Doctor
75% to 100% Benefited	00
Total	50



Let $\alpha = 0.05$ (level of significance)
 $P(X \leq 50/38, 0.5)$

The Wilcoxon Sign test would be applied as a frequently used non parametric test that does not depend on the assumption of the “t” test. This test focused on the median rather than the mean as a measure of Central tendency or Location. The median and the mean will be equal in a symmetric distribution. The assumption underlying the test is that the distribution of the variable of interest is continuous. This assumption rules out the use of nominal data. Hypothesis Ho: The number of patient cured and uncured is same at the end of the treatment. The effectiveness of the treatment on the patients was classified on the basis of the rating of the median (2) from the VAS Scale given by Ha: the number of Doctor benefited is more than less benefited or minimum benefited cases.

Ho is rejected, hence the treatment is effective in treating the Doctors, which is statistically authenticated by the Sign test, where we have assumed the success rate to be 50% (38 Doctor). However the present study shows a success rate of 76%. This contributes to the relaxation of the stress induced backache.

DISCUSSION

Yoga asana are primarily aimed at improving the muscle tone & elasticity of muscles. Yoga asana are smooth graded from initial posture to final static state this is achieved not through jerky movements, but slow dynamic movements. Therefore the risk of over training or injuring muscles and ligaments are reduced (Baldev Singh et al 1974). Sherman et al reported on the effectiveness of 12 weeks of Yoga sessions compared to conventional therapeutic exercise classes or a self-care book and demonstrated that 6 weeks of viniyoga was slightly more effective than conventional exercise and concluded that Yoga was a more effective treatment than a self-care book for improving functions and reducing chronic low back pain.⁵

CONCLUSION

Backache problems are started to be common occupational problems among dentists. In order to reduce backache problems, correct postural practices, relaxation interval sessions during work, and weight monitoring could be utilized. Yoga asanas and relaxation exercises are the only effective non-pharmacological methods for not only easing the stress but even to prevent it. Further studies should address the financial considerations in relation to work loss as attributed by neck and back pain. In our study on Fifty Dentists of Darbhanga District in

India, there is relief of pain on numerical pain scale post yoga treatment.

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REFERENCES

1. En.wikipedia.org.Yoga,[updated 2016 June 29, cited 2016 June 29]. Available from: <http://en.wikipedia.org/wiki/yoga>
2. Szymanska J. Disorders of the musculoskeletal system among dentists from the aspect of ergonomics and prophylaxis. *Ann Agric Environ Med* 2002; 9, 169–73.
3. Shugars D, Miller D, Williams D, Fishburne C, Srickland D. Musculoskeletal pain among general dentists. *General Dentistry* 1987; 4:272-6.
4. Williams K, Abildso C, Steinberg L, Doyle E, Epstein B. Evaluation of the effectiveness and efficacy of Iyengar yoga therapy on chronic low back pain. *Spine* 2009; 34: 2066-2076.
5. Sherman KJ, Cherkin DC, Erro J, Miglioretti DL, Deyo RA. Comparing yoga, exercise, and a self-care book for chronic low back pain: A randomized, controlled trial. *Ann Intern Med* 2005; 143: 849-857.