

Knowledge of Yoga and Its Health Benefits among Dentists in South Kerala, India

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Abstract

Background: Yoga as a holistic approach to health and is classified by the national institutes of health as a form of complementary and alternative medicine. Regular practice of yoga helps to build a better connectivity the mind and body through a series of postures, breathing exercises, and meditation. **Materials and Methods:** A cross-sectional survey was carried out to assess the level of knowledge regarding yoga and its health benefits among dentists in South Kerala. A total of 280 dentists participated in the survey. The level of significance was set as $P < 0.05$. **Results:** The survey revealed that knowledge of yoga and its health benefits was highest among males when compared to females. The survey shows that 57.1% of dentists believe that yoga can have an impact on oral health. Only 27.1% and 21.4% of the dentist knew about Bikram yoga and Kapalbhati yoga, respectively. **Conclusion:** The survey reveals that dentists had less knowledge about yoga. Proper yoga training for dentists would help them develop a healthy lifestyle and reduce stress-related health problems.

Keywords: Dentists, India, stress, yoga

INTRODUCTION

Yoga is a 3000-year old tradition which is being practiced in India. It is now regarded as a holistic approach to health and is classified by the National Institutes of Health as a form of complementary and alternative medicine.^[1] The word “yoga” is derived from Sanskrit word yuz, which is often interpreted as meaning “union.” Yoga is said to be for the purpose of uniting the mind, body, and spirit. Yoga focuses on body, breathing, and mind.^[2] Regular practice of yoga helps to build a better connectivity the mind and body through a series of postures, breathing exercises, and meditation. The benefits of yoga include decreased stress and tension, increased strength, balance and flexibility of muscles, lowered blood pressure, and reduction in cortisol levels.^[3]

Stress is a significant common risk factor for diabetes mellitus, cardiovascular diseases, preterm delivery, and osteoporosis as well as periodontal diseases.^[4] Psychosocial stress can affect the periodontal tissues directly through biological mechanism and indirectly through changes in lifestyle such as ignoring oral hygiene measures, smoking more heavily and consuming more fat and sugar in diet. Hence, there are two proposed mechanistic links: one biological and the other behavioral.^[5]

In general, depressed patients pay less attention to the oral hygiene practices and also to keep them motivated is difficult as they are found to be ignorant. According to Azmi *et al.*, more depressed a patient was, the more pain they had postperiodontal surgery, the stronger the pain medication they used and the more delayed their wound healing was after surgery.^[6]

Psychological stress and yoga are believed to be reciprocally related.^[7] Scientific evidence supports the belief that yoga benefits physical and mental health through downregulation of the hypothalamic-pituitary-adrenal axis and the sympathetic nervous system.^[8] Regular practice of yoga reduces the resting levels, of inflammatory cytokines such as tumor necrosis factor- α and interleukin-6.^[9] So by reducing the stress level yoga is helpful in preventing the dental disorder related to the stress, it also helps in improving the motivation for

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mechanical plaque control. Yoga allows the practitioners to be more regular, irrespective of the factors such as weather, climate, place; accessibility etc.^[10] In the oral cavity, saliva is a key ingredient for washing away bacteria and make food easier to swallow. When the salivary glands slow down the production of saliva, bacteria is allowed to grow. That is how “morning breath” occurs. Practicing yoga is a great way to learn proper breathing techniques that help prevent your mouth and throat from drying out. It can also stimulate the salivary glands. Yoga poses, such as forward bends, twists, and inverted poses, are known to increase saliva production.^[11] With much implications on oral health, the present study was undertaken to assess the knowledge of yoga among dentists in South Kerala.

MATERIALS AND METHODS

A cross-sectional, descriptive; questionnaire-based survey method was carried out to assess the level of knowledge regarding yoga and its health benefits among dentists in South Kerala. The list of all the registered dentists was obtained from the Kerala State directory of Indian Dental Association. Before start of the study, Ethical clearance was obtained from the Institutional Ethical Committee which was considered as a part of the study in the form of confidentiality of the respondents, freedom of expression, and informed consent.

A sample of 320 dentists in South Kerala was randomly selected by the computer, and they were invited to participate in this study. Out of the 320 dentists, 280 dentists participated in the survey. The response rate of the survey was 87.5%. The survey was conducted during February–March 2018. The questionnaire was designed in collaboration with experienced dentists, who also assisted with data analysis. The questionnaire was prepared in English containing 17 items. The face validity of the questionnaire was assessed. The next step included assessing the content validity in which the modified questionnaire was distributed among the expert panel which was formed by the faculty members in the department. Seven questions with an Aikens Index of <0.7 were discarded and the final questionnaire thus comprised of 10 questions. For the purpose of analysis, each correct response was given score “One” and wrong response was given score “Zero” in the items included in the questionnaire. Overall scores on the questions were based on the number of correct answers. Reliability was assessed by Test-retest method (Cronbach’s $\alpha = 0.89$).

The web-based questionnaire drawn up for this study was randomly sent by E-mail to the dentists in the samples. By using a personalized login and password; which was communicated in the E-mail, dentists obtained access to the online questionnaire through a secure website. In this way, confidential data collection was guaranteed. Dentists consented to participate in this study by sending their answers to the questions. All the dentists who had not responded within 2 weeks and within 5 weeks consecutively were sent a remainder by E-mail. The online survey period terminated 6 weeks after the start of the survey. Both the distribution of the

questionnaires was done by a research Institute, independently from the authors to ensure confidentiality.

RESULTS

Among the 320 randomly selected dentists, 280 dentists had completed the survey of which 56% were males, and 44% were females. The response rate of the survey was 87.5%. About 46% of the participants were in the age group 31–40 years, 21.4% in the age group <30 years, 25.7% in age group 41–50 years, and only 7% above 50 years. Majority of the dentists (53%) had 1–5 years of practice, 18% had 6–10 years of practice, 20% had more than 15 years of practice, and only 8.5% had 11–15 years of practice [Table 1].

Knowledge of yoga and its health benefits was highest among males when compared to females ($P = 0.011$). However, knowledge had a reverse relationship with age of the participating dentists. The knowledge was highest in study participants below 30 years and least in participants above 50 years, and this difference was found to be statistically significant ($P = 0.009$). Kruskal–Wallis test indicated that knowledge was highest in participants with an experience of 11–15 years and least in participants with experience of more than 5 years. This difference was also found to be statistically significant ($P = 0.000$) [Table 2].

Majority of the study participants (57.1%) knew the meaning of word “Yoga”. Only 41.4% of participating dentists knew the number of branches of yoga. However, 57.1% of dentists believe that yoga can have an impact on oral health. Majority of female dentists (1.2%) were aware that yoga had an impact on oral health when compared to male dentist. Only 27.1% and 21.4% of the participants knew about Bikram yoga and Kapalbhati yoga, respectively. The survey revealed that dentists who had less clinical experience had greater knowledge on yoga when compared to their senior counterparts [Table 3].

DISCUSSION

Yoga dating back to 5000 BC, is a physical and mental activity

Table 1: Frequency distribution of study participants

Variables	n (%)
Age (years)	
<30	60 (21.4)
31-40	128 (45.7)
41-50	72 (25.7)
>50	20 (7)
Gender	
Male	156 (56)
Female	124 (44)
Experience (years)	
1-5	148 (53)
6-10	52 (18.5)
11-15	24 (8.5)
>15	56 (20)

aimed at achieving self-knowledge, revealing inner essence, fostering a union with the divine and cosmic consciousness.^[12] It has its origin in ancient India and originally consisted of a combined system of spiritual, moral, and physical practices.^[13] The most central and common aspects of yoga practice today are different bodily postures (asanas) and breathing exercises (pranayama)^[14] that aim to focus the mind, achieve relaxation, and increase wellness.^[15] Several studies in the medical literature have shown a high incidence of stress and anxiety among medical and dental students. In one study, following a short-yoga intervention, medical students reported improvements in perceived stress and depressive symptoms.^[16] The practice of yoga will definitely be helpful for dentists to overcome hectic work schedules. Hence, the current study was undertaken to assess the knowledge of yoga and its benefits among dentists in South Kerala.

For dental professionals, it is necessary to improve the posture and condition of the body to prevent the injuries. Bhujangasana is one of the asanas which make the spine flexible and rejuvenates and revitalizes the spinal cord. Padmasana keeps

the lungs filled with oxygenated air and by keeping the diaphragm in proper position and also strengthens the legs by pulling the nerves, muscles, and bones taut and thereby massaging thoroughly. Sirshasana can help both normal and diseased eyes by producing increased blood circulation in the organ. Vajrasana helps in majority cases of varicose veins.^[17]

The best thing about yoga is that it is not rigorous and does not require long sessions, but can be carried out during short breaks, in times between two patients or while waiting for a restoration to set. Consistently and appropriately done small bouts of yoga can prove to be effective as long sessions. Thus, devoting 40–50 min on an average every day gives surprisingly results as one can remain fresh mentally and physically away from the professional hazards. The study by Koneru and Tanikonda^[18] found that yoga was more effective than other modes of physical activities such as aerobics, brisk walk, sports, etc. They also reported that 89.5% of yoga practitioners were free of musculoskeletal pain compared to those who did not practice yoga. The present study is the first of its kind in the world which would form a baseline data for future studies across the globe and India.

Table 2: Comparison of mean knowledge among study participants based on age, gender, and experience

Variables	Mean knowledge	SD	P
Age (years)			
<30	6	2.443	0.009*
31-40	5.94	1.774	
41-50	5.44	1.686	
>50	4.4	2.113	
Gender			
Male	6	2.006	0.011**
Female	5.35	1.884	
Experience (years)			
1-5	6.14	1.982	0.000***
6-10	4.92	1.877	
11-15	7	0.834	
>15	4.79	1.755	

*Kruskal-Wallis test, **Mann-Whitney test, ***Kruskal-Wallis test.

SD: Standard deviation

Recommendations

From this study, we would suggest the following recommendations:

- Inclusion of yoga in the BDS curriculum by the Dental Council of India. This would create awareness of yoga and its benefits on general health among dental students and enable them to practice yoga during their course of study
- To conduct periodic short-yoga courses for dentists by the State/Local branches of Indian Dental association. This would enable dentists to continue the practice of yoga throughout their life.

Conclusion

Occupational hazards, such as musculoskeletal pain and stress, are prevalent among dentists, specifically in younger age groups, and surprisingly, dentists as medical professionals

Table 3: Distribution of study participants based on correct responses

Variables	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
Age, n (%)										
<30	36 (60)	24 (40)	60 (100)	40 (66.6)	40 (66.6)	40 (66.6)	40 (66.6)	20 (33.3)	24 (40)	36 (60)
31-40	64 (50)	84 (65.6)	124 (96.8)	36 (28.1)	72 (56.2)	96 (75)	124 (96.8)	44 (34.3)	24 (18.7)	92 (71.8)
41-50	32 (44.4)	44 (61.1)	72 (100)	40 (55.5)	32 (44.4)	44 (61.1)	68 (94.4)	12 (16.6)	4 (5.5)	44 (61.1)
>50	8 (40)	8 (40)	20 (100)	0 (0)	16 (80)	4 (20)	16 (80)	4 (20)	8 (40)	4 (20)
Gender, n (%)										
Male	84 (53.8)	116 (74.3)	156 (100)	64 (41)	84 (53.8)	112 (71.7)	144 (92.3)	48 (30.7)	32 (20.5)	96 (61.5)
Female	56 (45.1)	44 (35.4)	124 (100)	52 (41.9)	76 (61.2)	72 (58)	104 (83.8)	32 (25.8)	28 (22.5)	80 (64.5)
Experience (years), n (%)										
1-5	88 (59.4)	84 (56.7)	144 (97.2)	68 (45.9)	96 (64.8)	112 (75.6)	132 (89.1)	48 (32.4)	32 (21.6)	104 (70.2)
6-10	16 (30.7)	28 (53.8)	52 (100)	16 (30.7)	20 (50)	24 (46.1)	44 (84.6)	16 (30.7)	12 (23)	28 (53.8)
11-15	16 (66.6)	24 (100)	24 (100)	12 (50)	12 (50)	24 (100)	24 (100)	8 (33.3)	4 (16.6)	20 (33.8)
>15	20 (35.7)	24 (42.8)	56 (100)	20 (35.7)	32 (57.4)	24 (42.8)	48 (85.7)	8 (14.2)	12 (21.4)	24 (42.8)

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are not well aware of the health benefits of yoga to treat these occupational hazards. Hence, awareness should be created among dental practitioners about the benefits of yoga, through continuing dental education programs to effectively manage occupational hazards and stress-related problems and develop a healthy lifestyle.

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Conflicts of interest

There are no conflicts of interest.

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QUESTIONNAIRE

1. Who is considered as the father of Yoga?
 - a. B S Iyengar
 - b. Patanjali
 - c. Swami Sivananda
 - d. Swami Vivekananda
2. The word Yoga means
 - a. To unite
 - b. To help
 - c. To find
 - d. To build
3. Yoga is beneficial in the management of
 - a. Stress
 - b. Obesity
 - c. Hypertension
 - d. All of the above
4. Number of branches in yoga
 - a. Six
 - b. Eight
 - c. Ten
 - d. Twelve
5. Does yoga have an impact on oral health?
 - a. Yes
 - b. No
 - c. Don't know
6. International yoga day is celebrated on
 - a. 10th February
 - b. 15th May
 - c. 21st June
 - d. 18th September
7. Yoga originated in
 - a. China
 - b. Srilanka
 - c. Bangladesh
 - d. India
8. Which form of yoga is done at a room temperature of 105 F for a duration of 90 min?
 - a. Bikram Yoga
 - b. Vinyasa Yoga
 - c. Ashtanga Yoga
 - d. Iyengar Yoga
9. Kapalbhati yoga asana is used to treat
 - a. Cardiovascular diseases
 - b. Diabetes
 - c. Gingivitis
 - d. Fatty liver
10. Which yoga asana is known as Cobra pose?
 - a. Tadasana
 - b. Uttasana
 - c. Balasana
 - d. Bhujangasana