

# Knowledge Attitude and Practices About Effects of Oil Pulling and Its Health Benefits Among Undergraduate Dental Students in Bareilly City: A Cross Sectional Study

## Abstract:

**Background:** Despite the growing and advancing technological methods of treating various diseases, the most straightforward and less complicated method of treating diseases without any side effects dates back to ancient ayurvedic herbs and practices.

**AIM-**This survey was conducted to evaluate and compare the knowledge, attitude and practice of the dental students towards oil pulling and its role in maintaining oral hygiene.

**Methodology:** This survey was conducted using a pre-validated questionnaire consisting of 16 questions about the knowledge, attitude and practice regarding oil pulling and its effects on oral health that was circulated among the dental students. Descriptive statistics was used in terms of the frequency and percentage and the independent t-test were employed to check the association between the survey questions.

**Results:** Out of 120 dental students, 61.7% knew what oil pulling is. Although 49.2% think that dentist should prescribe oil pulling for maintenance of oral hygiene, 40.8% are not sure whether it can be used for daily use.

**Conclusion:** This study highlights need for educational interventions on the importance of oil pulling. More awareness needs to be created among the dental students regarding how oil pulling positively influences oral health and serves to be an affordable and less harmful alternative to chemical medication.

**Key-words:** Oil pulling, Oral hygiene, Ayurveda, Traditional practice

## Introduction:

Oral health is of great importance to all individuals.[1] Many general disease conditions have oral manifestations which, in turn, is a risk factor for a number of oral health conditions.[2] Hence oral hygiene habits are instilled in childhood irrespective of nationality or geographic location of an individual.[1] Studies have shown both mechanical and chemical plaque control can help in reducing plaque levels.[3]

Although mechanical teeth cleaning techniques are the most dependable and most recognised means of maintaining oral hygiene, adjuvants have been looked for to reduce the production of plaque and promote oral hygiene. At now, chemotherapeutic medicines such Chlorhexidine containing

mouthwash are utilised as adjuvant agents to prevent plaque development, but, they have their own drawbacks of taste disturbance, extrinsic tooth discoloration and oral mucosa desquamation.[1,3]

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Many ancient medical practices, like Ayurveda, have been gaining traction recently because of their natural origin, affordability, minimal negative effects, and increased patient compliance.[4]

An vital component of daily health rituals, or Dinacharya, oil pulling is an old oral kriya or activity prescribed in Ayurvedic teachings. Dr. Karach first became acquainted with the idea of oil pulling in Russia during the 1990s.[5] In alternative medicine, swishing oil in the mouth for advantages to dental and systemic health is referred to as "oil pulling" or "oil swishing." Edible oils like sesame or sunflower can be used for oil-pulling treatment. Eliminating dental cavities and removing plaque are therefore greatly aided by oil pulling, which can be done with sesame or sunflower oil.[6]

Ayurveda is one of the popular and well accepted modality of Complementary and alternative medicine and it has gained popularity as complementary medicine in other parts of the world.[7] Guidelines have been prepared by the Ministry of Ayush to encourage Indian residents to adopt the practice of oil pulling.[8] It is important to shape medical students' perceptions of the advantages of conventional medicine as they will be the physicians of the future, bringing with them their beliefs, expertise, and aspirations for the field. Therefore, the purpose of this study was to evaluate undergraduate dentistry students' knowledge, attitudes, and behaviours about oil pulling in order to gauge their comprehension of the subject and boost their confidence in prescribing this therapy in regular clinical practice.

### Materials and Methods

Type of study-Cross sectional, questionnaire based

Place of study-Institute of Dental Sciences, Bareilly

Duration of study. 4th March 2023 to 12th April 2023.

Sample size-The study was carried out on 120 dental undergraduate students.

Study tools-Students were provided with predesigned pre-validated 16-item questionnaire based on study objectives.[2]

The questionnaire consisted of 16 questions which focused on knowledge-based (9) questions regarding familiarity of students towards oil pulling, attitude-based (3) questions eliciting what they feel about such strategies, and practice-based (4) questions to judge whether they incorporate these strategies in their daily practice.

### Statistical Analysis:

For data Analysis and Statistical assessment, data collected were tabulated and compiled in MS Excel. Data collected were grouped into data for undergraduates of dental students and total summation of the entire sample was done. Descriptive statistics was used in terms of frequency and percentage. With a level of significance value  $< 0.05$ , the independent *t*-test were employed to check the association between the survey questions.

### Result :

This study consisted of 120 undergraduate dental students and the maximum students participating in the study belonged to the age group 21-23yrs and maximum of dental students(n=82) were female.(Table 1)

The number of correct answers given for each question in the questionnaire was calculated and the percentage of correct answers for each question were determined for the entire sample. (Table 2)

61.7% responded that they were aware of oil pulling and 25% responded that they didn't know about oil pulling whereas 13.3% were not aware of oil pulling. About 51.7% participants knew that oil pulling should be done early morning before brushing but only 45.8% responded that the ideal time to spit oil is when it loses its viscosity and becomes thick and milky.52.5% of participants knew that oil pulling is very effective against plaque induced gingivitis although 55.8% of them were not aware that oil pulling helps to inhibit growth of malignant tumour. Only 37.5% knew oil pulling can be practiced daily whereas majority(40.8%) of participants were not sure whether oil pulling can be practiced daily. About 45% of them were not sure whether it is advisable for children's below 5 years to practice oil pulling. Only 30.8% of participants think that oil pulling can replace the usage of chemical mouthwashes to prevent and maintain oral health.25% of participants answered that sesame oil is used for oil pulling,32.5% answered that mustard oil is used for oil pulling and most of the participants (42.5%) answered that coconut oil is used for oil pulling. 33.3% of participants agreed that chronic usage of oil pulling has effect on systemic issues like GERD, peptic ulcers, diabetes, migraine although 52.5% of them were not sure about the effects of oil pulling on GERD, peptic ulcers, diabetes, migraine. Majority of participants (55.8%) agree that oil pulling can help in reduction of halitosis. About 44.2% responded that they were not sure whether the chronic usage of oil pulling can stain the teeth. Nearly 49.2% of participants agreed to the statement that dentist (practitioner) should advise oil pulling for patient with moderate oral health for maintenance.

### Discussion:

Growth is adversely impacted by poor dental health in many spheres of human development. In light of the fact that both developed and developing nations lack oral health policies, health administrators should advocate for the inclusion of oral health in national health plans and create suitable oral health strategies that take disease prevention and promotion into account. The cornerstone of maintaining good oral health and preventing oral illnesses is prevention. In modern medicine, there has been minimal progress with prevention and treatment of oral disorders.

The practice of Ayurveda, a traditional holistic medical system, dates back about 3000-5000 years, with its origins in the Indian subcontinent.[9] This type of medicine not only suggests using particular herbs and minerals to treat different oral illnesses, but it also suggests some everyday therapeutic practices that have been shown to be cost-efficient, safe, and helpful for maintaining dental health. Recently, there is renewed interest in use of various Ayurvedic drugs for oral and dental health among which oil pulling is gaining momentum.[10] Therefore, the goal of this study was to ascertain the knowledge, attitudes, and practice of undergraduate dental students regarding the benefits of oil pulling for health

In oil pulling, a spoonful of oil is swished about the mouth early in the morning, before breakfast, and for around twenty minutes on an empty stomach. In case of children greater than five years of age, one teaspoon of oil is used. By swishing the oil about the mouth, it becomes "pulled" and shoved in between each tooth. If all goes according to plan, the thick oil will finish up thinner and milky white at the end of this activity.[6,11] After that, the mouth is completely cleaned with either tap water or clean, warm saline water, and the teeth are either manually cleaned or brushed on a regular basis. This operation can be completed in as little as 5 to 10 minutes if the jaw hurts. Due to the possibility of swallowing, children under the age of five should not use it. The longer process time of oil pulling therapy as opposed to chlorhexidine is its only drawback. For adults and children over the age of five, it can thus be used as a preventative home treatment to maintain dental hygiene.[6,12]

In the present study, 61.7% of dental students were aware of oil pulling. 62.5% of them knew about mechanism of oil pulling and 63.3% knew that oil should be advised to spit out instead of swallowing it. The low knowledge scores among dentists in this study were consistent with those of

Krishnapriya et al(2018)[2], Bharathi.S et al(2019)[13] and Ram et al(2020)[14]. Only 30.8% felt that oil pulling can replace chemical mouthwash to maintain oral health and 33.3% of dental students think chronic usage of oil pulling has effect on systemic diseases. Although 56.7% and 55.8% dental students felt that practicing oil pulling improves both general and oral health and helps in reduction of halitosis respectively. 49.2% of students feel that dentist should advise oil pulling for patient with moderate oral health for maintenance and another 41.7% of them are not sure whether oil pulling can be prescribed to patients. On the whole the results of the study have shown that a gap exists between the knowledge, attitude and practice of oil pulling among the dental students. It has been shown that dentistry students' understanding is still lacking till date which is quite concerning.

A study done by Kaviyaselvi et al(2021)[15], Basha et al(2021)[16] on general population found significantly high concentrations of people were unaware of this practice and there was a growing need to spread information on the same.

In developing country like India where oral health is a major concern for all there still exists a huge gap regarding awareness among individuals especially among dental professionals. Further, to motivate and increase knowledge among dental students, continuing education programs should be planned and implemented regularly emphasizing the importance and effects of oil pulling on oral health. Dental students can establish successful collaborations with Ayurvedic colleagues to communicate and establish interdisciplinary approach and provide better oral health care to patients.

In spite of all the advances in the field of health science, traditional healing methods still have a major role to play.

### Limitations:

Since the study is questionnaire-based, its limitations arise from the fact that most of the replies are self-reported and contain incomplete information. Bias may arise because participants may have given answers that were socially acceptable but did not truly reflect their thoughts. The questionnaire lacked open-ended questions to probe participants' responses further.

The fact that the study was limited to one location is another limitation. As a result, it is suggested that similar studies be

carried out nationwide to notify the relevant authorities and start a plan of action for improving the nation's practicing dentists' expertise.

Table 1: shows the demographic distribution of the study population.

Demographic Details		Dental
Age	18-20 yrs	27 (22.5%)
	21-23 yrs	<b>78 (65%)</b>
	24-26 yrs	15 (12.5%)
Gender	Male	38 (31.7%)
	Female	<b>82 (68.3%)</b>

Table 2: Participants' responses to questions regarding the effects and outcomes of oil pulling on health

Questions	Options	Percentage of responses
<b>Questions on Knowledge</b>		
1. Do you know about oil pulling?	a) Yes	<b>74 (61.7%)</b>
	b) No	30 (25%)
	c) Not sure	16 (13.3%)
2. Oil pulling should be done _____	a) Early morning (empty stomach) before brushing	<b>62 (51.7%)</b>
	b) Early morning (empty stomach) after brushing	23 (19.2%)
	c) Night time before bed	35 (29.2%)
3. Ideal time to spit oil after doing oil pulling?	a) After 10 minutes	<b>58 (48.3%)</b>
	b) After 20 minutes	7 (5.8%)
	c) Once oil loses its viscosity and becomes thick and milky	55 (45.8%)
4. Oil pulling works under _____ mechanism?	a) Emulsification	<b>75 (62.5%)</b>
	b) Saponification	12 (10%)
	c) None of the above	33 (27.5%)
5. Oil that is used to swishing around the mouth can be swallowed instead of spitting it out.	a) Agree	17 (14.2%)
	b) Disagree	<b>76 (63.3%)</b>
	c) Not sure	27 (22.5%)
6. Oil pulling is very effective against plaque induced gingivitis.	a) Agree	<b>63 (52.5%)</b>
	b) Disagree	10 (8.3%)
	c) Not sure	47 (39.2%)
7. Oil pulling inhibits growth of malignant tumor.	a) Agree	18 (15%)
	b) Disagree	35 (29.2%)
	c) Not sure	<b>67 (55.8%)</b>

8. Oil pulling can be practiced daily.	a) Agree	45 (37.5%)
	b) Disagree	26 (21.7%)
	c) Not sure	<b>49 (40.8%)</b>
9. Is it advisable for children's below 5 years to practice oil pulling?	a) Yes	13 (10.8%)
	b) No	<b>54 (45%)</b>
	c) Not sure	53 (44.2%)
<b>Questions on Attitude</b>		
10. Do you think oil pulling can replace the usage of chemical mouthwashes to prevent and maintain oral health?	a) Yes	37 (30.8%)
	b) No	29 (24.2%)
	c) Not sure	<b>54 (45%)</b>
11. According to you which of the following oil is most commonly used for oil pulling?	a) Sesame oil	30 (25%)
	b) Mustard oil	39 (32.5%)
	c) Coconut oil	<b>51 (42.5%)</b>
12. Do you think chronic usage of oil pulling has effect on systemic issues like GERD, peptic ulcers, diabetes, migraine?	a) Yes	40 (33.3%)
	b) No	17 (14.2%)
	c) Not sure	<b>63 (52.5%)</b>
<b>Questions on Practice</b>		
13. Practicing oil pulling improves both general health and oral health.	a) Agree	<b>68 (56.7%)</b>
	b) Disagree	8 (6.7%)
	c) Not sure	44 (36.7%)
14. Oil pulling aids in reduction of halitosis.	a) Agree	<b>67 (55.8%)</b>
	b) Disagree	8 (6.7%)
	c) Not sure	45 (37.5%)
15. Chronic usage of oil pulling stains teeth.	a) Agree	42 (35%)
	b) Disagree	25 (20.8%)
	c) Not sure	<b>53 (44.2%)</b>
16. Dentist (practitioner) should advise oil pulling for patient with moderate oral health for maintenance.	a) Agree	<b>59 (49.2%)</b>
	b) Disagree	11 (9.2%)
	c) Not sure	50 (41.7%)

### Conclusion:

This questionnaire based study has given a view of the knowledge of undergraduate students regarding benefits of oil pulling. Although many of the participants have positive attitudes regarding knowledge about oil pulling but there is lack of knowledge in prescribing oil pulling to patients for maintainance of oral health. This study further stresses the need to conduct more educational programs and create awareness among dental students who are the future clinicians about the about benefits of oil pulling on oral and general health.

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