

Old is Gold: Oil Pulling

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Abstract- The oral cavity serves as a focal point of entry for pathogens into the systemic circulation. **Aim:** Aim of the study is to improve oral health. **Objectives:** To treat bleeding gums, check gingival status with gingival and plaque index and check the microbial load at baseline and after 45 days. **Materials and method:** Take one tablespoon of sesame oil 500ml in the mouth on an empty stomach in the morning. With the mouth closed and chin up, without speed or effort, sip, suck, and pull the oil through the teeth in a relaxed way, and also exercise the jaw as if chewing, for a period of 15 to 20 min. Do not gargle in throat. Initially the oil is viscous but slowly it turns thin and milky white as you continue. **Result:** The mean number of bacterial colonies, gingival index score and plaque index score was declined after 45 days of oil pulling. **Conclusion:** The CFU (Colony Forming Unit) count and the plaque and gingival score correspond, showing a connection between plaque and gingivitis and the number of oral bacteria in the mouth. These findings show that pulling treatment is an effective preventive strategy that can become a daily oral hygiene practise.

Key Words--Sesame oil, Oil pulling, Microbial load count, Gingivitis

I. INTRODUCTION:

Oral health is another essential piece of puzzle when it comes to staying healthy. To provide whole person, integrated, patient centered, comprehensive care, it is important to connect the mouth with the rest of the body. The oral cavity serves as a focal point of entry for pathogens into the systemic circulation. Gingivitis is a most common oral disease due to bacterial infection due to prolonged effects of microorganisms present in plaque.

Various antibacterial mouth rinses are used nowadays but they have long term side effects like staining, lingering taste and allergy so it shows the need of home remedy that the patient can practice at home as a preventive measure. Oil pulling or oil swishing is a procedure which involves swishing of oil for oral and systemic health benefits. Oil pulling with sesame oil is most commonly used traditional folk remedy in India for many years for healthy gums. The history of oil pulling comes from Ayurvedic text Charaka Samhita, where it is referred to as Kavala Graha/Kavala Gandhoosha and is claimed to have cured about 30 systemic diseases ranging from headache to migraine to diabetes and asthma^[1].

Sesame oil has antioxidants like sesamin, sesamol and sesaminol. Bacterial adhesion and plaque accumulation is reduced by the viscosity of the oil or by saponification or by soap formation process which occurs as result of alkali hydrolysis of fat. Untreated gingivitis can progress to more destructive form of periodontal disease so it is necessary for effective modality of prevention which can arrest the progression of disease and maintains the health of the tissue.

If neglected, gingivitis can develop into a more serious form of periodontal disease. It is important to have a reliable method that can prevent and stop the spread of the disease and guarantee healthy tissues. Exploration is required for a common household cure like oil pulling, which improves overall health while saving time and money. The goal of this study is to learn more about oil pulling's dental advantages. If this study is successful, it may raise public awareness of the long-forgotten practise of oil pulling, which is an effective preventive home therapy in developing nations.

II. MATERIAL AND METHODS: 20 subjects were selected and were distributed randomly into Group A(10- control) and Group B(10-experimental) based on inclusion and exclusion criteria. Group B participants were instructed to practice oil pulling for a duration of 45 days daily. The subjects were the patients of Ahmedabad dental college and hospital, Ahmedabad and the study was conducted in Department of Periodontics and Department of Microbiology of the same college.

Inclusion criteria: Subjects of age group 18 to 21 years with at least 20 permanent natural teeth having mild to moderate plaque and gingivitis were selected. The subjects should not have used any mouth rinse/ wash in past 6 months.

Exclusion criteria: Subjects who are pregnant, lactating or with a history of antibiotic usage for the past 3 to 4 weeks, smokers and having an allergy from the oil were excluded.

Informed consent procedure: The consent form is signed by the subjects before starting the study.

Base line index scoring: The plaque index and gingival index were recorded on baseline day 0 and on day 45.

Plaque index: The plaque index by Silness P and Loe H (1967) is used to assess only the thickness of plaque in the gingival area of the tooth on the index teeth 16,12,24,36,32,44.

Gingival index: The gingival index by Loe H and Silness J is used to assess the severity of the gingivitis on index teeth 16,12,24,36,32,44.

Baseline CFU Sampling: On day 0 all the subjects are instructed to wash their mouth with the physiological saline (0.85% NaCl). This saline is collected in a sterile container and is serially diluted and plated in nutrient agar plates. The plates are incubated aerobically at 37 degree C for 24 hours. After this incubation period, the number of colonies present in 1 ml of the saline is calculated^[1].

Colony count is calculated by the formula

$$\text{Number of bacteria/ml} = \text{Number of colonies} \times \text{dilution} \times \text{Amount plated} \quad [\text{Eq. 1}]$$

Group A : Participants are requested to continue with their routine oral hygiene practise.

Procedure to practice oil pulling for Group B: Take one tablespoon of sesame oil 500ml in the mouth on an empty stomach in the morning. With the mouth closed and chin up, without speed or effort, sip, suck, and pull the oil through the teeth in a relaxed way, and also exercise the jaw as if chewing, for a period of 15 to 20 min. Do not gargle in throat. Initially the oil is viscous but slowly it turns thin and milky white as you continue.

On 45th day CFU score, gingival index and plaque index are measured.

III. STATISTICAL ANALYSIS: Students paired ‘t’ test is used to compare plaque scores, gingival scores and CFU count before and after oil pulling. Correlation test is used to compare these parameters between two groups.

IV. RESULTS:

Table 1: Comparison of No. of Colonies before and after Oil Pulling

TIME PERIOD	G GROUP	NUMBER	BACTERIAL LOAD COUNT		P VALUE
			MEAN	SD	
0 DAYS	A	10	37.6*10 ³	2.04*10 ³	≤ 0.05*
	B	10	38*10 ³	1.23*10 ³	
45 DAYS	A	10	36.25*10 ³	1.76*10 ³	
	B	10	31.9*10 ³	0.96*10 ³	

Level of Significance P ≤ 0.05* Significant, ** Non-Significant

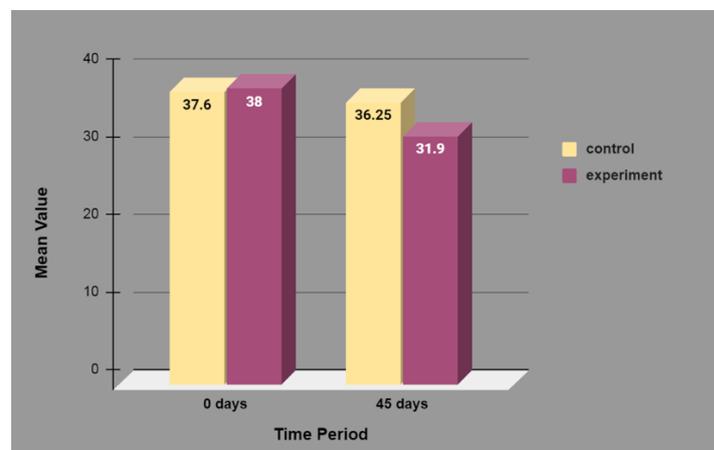


Figure:1

The mean number of bacterial colonies declined in Group B from 38*10³ to 31.9*10³ after 45 days of oil pulling.

Table 2: Comparison of Plaque Index Score before and after Oil Pulling

TIME PERIOD	GROUP	NUMBER	PLAQUE INDEX		P VALUE
			MEAN	SD	
0 DAYS	A	10	1.47	0.15	≤ 0.05*
	B	10	1.45	0.13	
45 DAYS	A	10	0.90	0.05	
	B	10	0.75	0.10	

Level of Significance P ≤ 0.05* Significant, ** Non-Significant

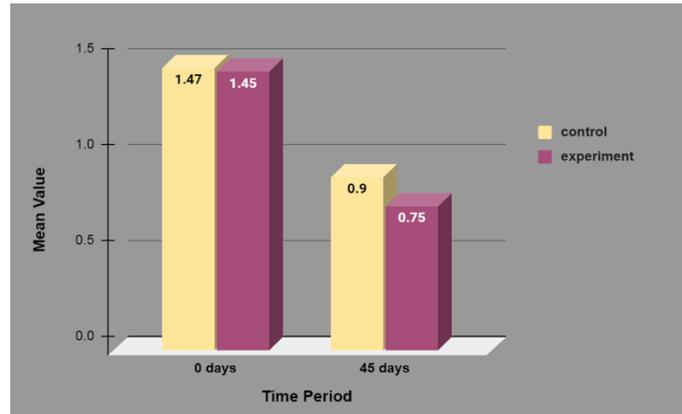


Figure:2

The mean gingival index score declined in Group B from 1.45 to 0.75 after 45 days of oil pulling.

Table 3: Comparison of Gingival Score before and after Oil Pulling

TIME PERIOD	GROUP	NUMBER	GINGIVAL INDEX		P VALUE
			MEAN	SD	
0 DAYS	A	10	1.88	0.05	≤ 0.05*
	B	10	1.80	0.17	
45 DAYS	A	10	0.72	0.13	
	B	10	0.64	0.09	

Level of Significance P ≤ 0.05* Significant, ** Non-Significant

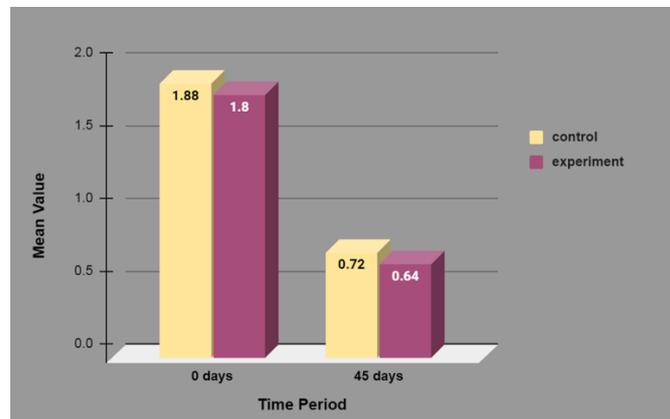


Figure: 3

The mean Plaque index score declined in Group B from 1.80 to 0.64 after 45 days of oil pulling.

V.HEALTH BENEFITS: In addition to being effective at preventing oral infections, oil pulling also actively combats them. The oil helps the body repair itself by drawing the diseases (bacteria, toxins, and pus) out of the tissues. Gums stop bleeding, loose teeth tighten, and pain and sensitivity go away as the inflammation subsides. Whiter teeth and healthier-looking, pinker gums are the results.

VI.ORAL HEALTH BENEFITS:

1. Prevent dental caries
2. Oral malodour
3. Bleeding gums
4. Dryness of the throat and cracked lips.

VII.DISCUSSION:Oil pulling is not widely practised, and there is not enough scientific data to support its effects on dental issues. Therefore, the purpose of this study is to determine how an oral hygiene practise like oil pulling, which can become a habit, can alter plaque, gingivitis, and bacteria that are present in the mouth. This kind of investigation uses microbiological data to back up clinical conclusions.

Ancient Hindu texts and scriptures has also mentioned about the benefits of Oil pulling for better health. Literature related to oil pulling and dental health is scanty. It is a simple and cost effective method for maintenance of oral hygiene in routine life. Regarding the use of oil pulling therapy in maintaining dental health, a few research have been published in the literature. According to a study by Amith et al.(2007), oil pulling by sunflower oil showed dramatically decreased plaque scores after 45 days^[2].Another study conducted by Asokan et al (2008) showed a definitive reduction in the *Streptococcus mutans* count in plaque and saliva after oil pulling therapy. So, oil pulling therapy has shown to reduce the incidence of dental caries^[3].

The oil has cleansing properties. It "pulls" out bacteria and other debris when you put it in your mouth and move it around your teeth and gums. The detoxifying effects of oil pulling are quite strong. The first time you use it, toxins are removed from the body. Your throat and sinuses will produce more mucus, which is one of the first signs of cleansing you'll encounter.You may even have to expel the oil and clear the mucus from your throat before reaching the full 20 min^[4].

Streptococcus mutans was shown to be resistant to the antibacterial effects of sesame oil. High levels of unsaturated fatty acids are present. The two main components are linoleic and oleic acids. Sesame oil pulling therapy effectively reduced *S. mutans* numbers in adolescent plaque and saliva within a week. Sesame oil provides a number of benefits, including no discoloration, aftertaste, and allergy. Sesame is the most widely used food and is 5–6 times more affordable than chlorhexidine. It's unclear how oil pulling therapy inhibits plaque formation.

CFU count is taken to find out the antibacterial effects of oil pulling and the mean number of bacterial colonies declined in Group B from 38×10^3 to 31.9×10^3 after 45 days of oil pulling.

The Gingival index score was taken at 0 days and 45 days and The mean gingival index score declined in Group B from 1.45 to 0.75 after 45 days of oil pulling.

The Plaque index score was taken at 0 days and 45 days and The mean Plaque index score declined in Group B from 1.80 to 0.64 after 45 days of oil pulling.

However, no significant reduction was seen in the case of group A.

VIII.CONCLUSION:

It is clear from the findings that oil pulling significantly reduces plaque and gingivitis. Given the good outcomes, it can be concluded that oil pulling, especially when used for a brief period of time like 45 days, significantly reduces plaque and gingivitis. It can become a healthy dental hygiene habit if done consistently. According to the CFU count values, oil pulling has an antibacterial effect because the findings after 45 days of oil pulling revealed a decrease in the number of bacteria per millilitre. The results of the control group demonstrate that, in some circumstances, untreated plaque and gingivitis might worsen, as seen by a rise in plaque and gingival scores. When adequate oral hygiene precautions are not performed, CFU count also rises. The CFU count and the plaque and gingival score correspond, showing a connection between plaque and gingivitis and the amount of

oral bacteria in the mouth. these findings show that pulling treatment is an effective preventive strategy that can become a daily oral hygiene practise.

IX. REFERENCES:

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