Review Article

Oil Pulling - A Fact or Fad in Dentistry

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Abstract:

Oil pulling is a traditional Ayurvedic remedy originally used in ancient India to maintain oral health. In recent times, alternative and traditional medicinal treatments, such as Ayurveda, have gained popularity due to their natural origin, affordability, minimal side effects, and enhanced patient compliance1. The goal of this narrative review is to highlight the procedure of oil pulling that has the potential to be used as an adjunct to conventional chemical means of oral hygiene practice. Incorporating oil swishing as a component of daily oral hygiene can significantly improve oral and general health, specifically in lower socioeconomic groups and rural communities that may have interrupted access to health-care services and dental products such as dentifrices and mouth washes.

In this review the different oils used in oil pulling, procedure, the mechanism involved, benefits & limitations have been discussed. Integration of oil pulling into daily oral hygiene can have potential to be effective in preventing dental caries, plaque accumulation, plaque induced gingivitis, teeth whitening and improvement of gingival health.

Keywords- oil pulling therapy, oral hygiene, Emulsification, Sesame oil, Saponification, coconut oil, Antimicrobial agent, Traditional medicine.

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INTRODUCTION TO OIL PULLING IN DENTISTRY:

Oil pulling is an ancient Ayurvedic practice that involves swishing oil in the mouth for oral and systemic health benefits. Traditionally, sesame or coconut oil is used for this technique, which is believed to help remove toxins, bacteria, and debris from the oral cavity.

In dentistry, oil pulling has gained attention as a complementary oral hygiene practice due to its potential benefits in reducing plaque, gingivitis, and harmful bacteria. Studies suggest that oil pulling may help decrease oral malodour, improve gum health,

and reduce the microbial load in the mouth, similar to the effects of chlorhexidine mouthwash1.

While oil pulling is not a replacement for conventional oral care practices such as brushing and flossing, it is considered a supportive measure that can enhance overall oral hygiene. Dental professionals continue to explore its efficacy and mechanisms, making it an area of growing interest in holistic and preventive dentistry.

This review aims to provide a comprehensive overview of studies on the traditional practice of oil pulling, including its application, procedure, benefits, mechanism, and limitations, by analysing current literature on the oil pulling4.

What is Oil Pulling

Oil pulling, also known as oil swishing, involves vigorously swishing oil in the oral cavity to promote both local and systemic health benefits, similar to the modern use of mouthwashes and oral rinses. This practice has been used for centuries to aid in the prevention and treatment of various oral and systemic diseases, utilizing edible oils such as sunflower, sesame, and coconut oil.

It is believed that oil swishing can help manage or alleviate up to 30 different systemic conditions, including headaches, migraines, and chronic diseases like asthma and diabetes mellitus. Research indicates that oil pulling, when used alongside conventional oral hygiene practices, can significantly benefit oral health. Studies suggest that this therapy may lower the total bacterial count in the mouth, reduce plaque accumulation, and improve gingival health5. Additionally, it has been shown to decrease susceptibility to dental caries from a severe to a moderate or mild level[1].

Procedure for Oil Pulling[3]:

- **Select an Oil:** Traditionally, sesame, coconut, or sunflower oil is used, with coconut oil being a popular choice due to its antimicrobial properties.
- **Measure the Oil:** Take approximately 1 tablespoon (15 ml) of oil.

Swish the Oil

- Place the oil in your mouth by tipping your head
- Down.
- Gently swish it around your teeth and gums for 10 minutes.
- Avoid swallowing, as the oil absorbs toxins and bacteria.
- **Spit It Out:** Dispose of the oil in a trash can to prevent drain blockage.
- Rinse Your Mouth: Use warm water or salt water to rinse thoroughly.
- Brush Your Teeth: Complete the process by brushing and flossing as usual.

MECHANISM OF OIL PULLING

While there are numerous theories, the exact mechanism of action is unclear.

1. Alkali Hydrolysis of Fat

The process of alkali hydrolysis, similar to saponification or "soap-making," occurs during oil pulling. As the oils used contain fats, this reaction emulsifies the fat with bicarbonate ions naturally present in saliva. Since soaps are effective cleansing agents, this interaction enhances the oil's ability to mix with saliva, increasing its surface area and improving its overall cleansing action[6].

Composition and Reaction in the Oral Cavity

- **Oil Composition:** Oils used in oil pulling primarily consist of triglycerides, which are esters formed from glycerol and fatty acids.
- **Salivary Alkalinity:** Human saliva has a slightly alkaline pH, typically ranging from 6.2 to 7.6, and contains enzymes such as lipase that aid in fat breakdown.
- **Hydrolysis Reaction:** When oil is swished in the mouth, the mild alkalinity of saliva and enzymatic activity may trigger the hydrolysis of triglycerides, breaking them down into glycerol and free fatty acids. This process is similar to saponification, where fats degrade in the presence of an alkali.
- **Antimicrobial Properties:** The free fatty acids released, particularly lauric acid found in coconut

oil, exhibit antimicrobial properties that help reduce bacterial load in the oral cavity[1].

Viscous Nature of Oil

The thick, viscous consistency of oil forms a protective barrier on surfaces, reducing the adhesion of plaque and bacteria. This property prevents microorganisms from firmly attaching to teeth and other oral surfaces, making their removal easier through rinsing or brushing. Additionally, the oil's texture helps trap and lift debris, further preventing plaque buildup. This principle is central to oil pulling, a traditional practice in which swishing oil in the mouth helps minimize bacterial growth and promote better oral hygiene. Thus, the viscosity of oil plays a key role in inhibiting plaque accumulation and bacterial adhesion[1].

Antioxidants Present in the Oil Cause Detoxification

The antioxidants present in oils contribute to detoxification by preventing lipid peroxidation, which creates an antibiotic-like effect. This helps eliminate harmful microorganisms while enhancing the action of Vitamin E in the oral cavity. Oils such as olive oil, coconut oil, and sesame oil are rich in antioxidants like Vitamin E, polyphenols, and carotenoids, which aid in neutralizing free radicals, reducing oxidative stress, supporting liver function, and facilitating toxin removal from the body.

Different Oils Used for Oil Pulling6

- Coconut oil
- Sesame oil
- Sunflower oil
- Palm oil
- Corn oil
- Rice bran oil
- Soybean oil

CHEMICAL COMPOSITION OF COMMONLY USED OILS FOR OIL PULLING[2]

1. Sesame Oil

Sesame oil contains three lignans— sesamin, sesamolin, and sesaminol—which are rich in Vitamin E and polyunsaturated fatty acids. Additionally, it is composed of significant amounts of linoleic acid and oleic acid. These components exhibit antioxidative properties, helping to reduce lipid peroxidation and protect oral tissues from free radical damage.

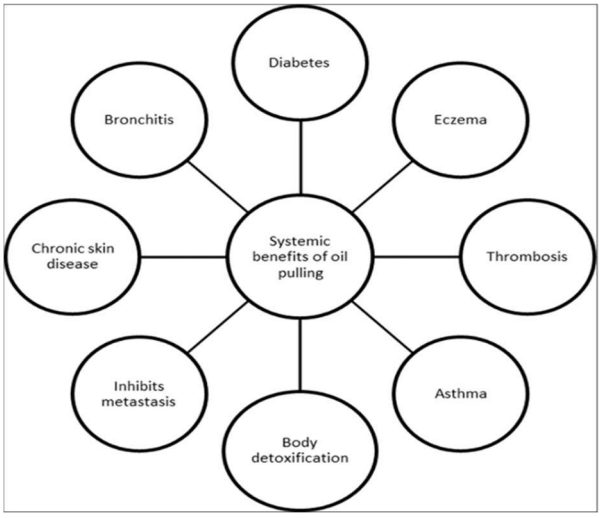
2. Coconut Oil

Coconut oil is primarily composed of 92% saturated fatty acids, with lauric acid accounting for nearly 50% of them. Monolaurin and monoglycerides derived from lauric acid have been shown to possess antimicrobial properties effective against various microorganisms. These include Helicobacter pylori, Staphylococcus aureus, Escherichia vulneris, Enterobacter, and multiple Candida species, such as Candida glabrata, Candida albicans, Candida stellatoidea, Candida parapsilosis, Candida tropicalis, and Candida krusei, along with certain viruses.

Benefits of Oils[10]

- Helps prevent dental caries.
- Eliminates odor-causing bacteria, reducing bad breath11.
- Lowers plaque buildup and minimizes gingivitis6.
- Naturally whitens teeth without the use of harsh chemicals.
- Strengthens gums and jaw muscles.
- Reduces bacterial counts7.

Systemic Effects: This practice is believed to aid in the prevention and treatment of over 30 different ailments, ranging from headaches, migraines, and thrombosis to skin conditions like eczema. Additionally, it is thought to help manage serious conditions such as diabetes and asthma[1].



Limitations[2]

Oil pulling is a traditional Ayurvedic practice that involves swishing oils like coconut, sesame, or sunflower oil in the mouth to promote oral health. While some research indicates that it may help reduce plaque, bacteria, and bad breath, its application in dentistry comes with several limitations:

- Not recommended for children under five years of age.
- Contraindicated for individuals with asthma due to the risk of aspiration4.
- Lacks strong scientific evidence to fully support its effectiveness.
- Should not be used as a substitute for conventional oral hygiene practices.
- Has limited impact on advanced dental conditions.
- Potential risk of adverse effects in some individuals.
- Prolonged swishing (15–20 minutes) may lead to jaw fatigue or muscle strain.
- Accidental ingestion of oil may cause stomach discomfort.
- Improper technique could result in lipid pneumonia due to oil aspiration into the lungs9.
- Can be time-consuming and inconvenient for daily routines.
- Requires a commitment of 15–20 minutes per session, which may not be practical for everyone.

DISCUSSION

The available literature on oil pulling and its impact on dental health remains limited. This practice traces its origins back to ancient Hindu texts and scriptures. Given the scarcity of scientific studies evaluating its oral health benefits, oil pulling and similar alternative healing approaches warrant further research. However, existing reports suggest that oil pulling can significantly enhance oral hygiene.

Oil pulling therapy is a straightforward and cost-effective method for maintaining good oral health, requiring no strict precautions. Unlike other detoxification methods, it is effortless, simple, and free from harmful effects. Additionally, most of the oils used in this practice do not cause side effects, leave an unpleasant aftertaste, or trigger allergic reactions. Importantly, oil pulling does not require specialized oils—common household oils such as sunflower or other vegetable oils can be used. This makes it highly accessible and affordable, with refined oil costing approximately 1–2 USD per liter, making each rinse significantly cheaper than commercial oral care products. Moreover, oil pulling does not affect taste perception or sensation.

Chlorhexidine mouthwashes are commonly used as adjuncts in managing dental caries and periodontal diseases. However, their use is sometimes limited due to their unpleasant taste and side effects, such as staining. The stannous content in some oral rinses contributes to extrinsic tooth staining, while the zinc and stannous salts affect taste perception, restricting their concentration in formulations. In contrast, oil pulling does not cause such adverse effects. Despite its potential, clinical guidelines for oil pulling remain unavailable due to limited research on alternative oral hygiene practices.

While oil pulling is generally considered safe, it is not recommended for children, especially if processed in facilities that handle nut- and seed-based oils. Rare cases of lipoid pneumonia have been reported in individuals who practice oil pulling regularly.

Summary

This review explores the practice of oil pulling, a simple and cost-effective oral hygiene technique. It requires just 10 mL (one tablespoon) of vegetable oil and 20 minutes each morning on an empty stomach. The review aims to assess the effectiveness of various oils used for oil pulling and compare their benefits. Multiple studies were analysed to evaluate the potential of different oils in reducing oral bacterial load.

Oil pulling, also known as oil swishing, is an Ayurvedic method for maintaining oral health and boosting the immune system. It serves as a powerful detoxifying agent, promoting internal healing. It is widely acknowledged that poor oral health is a major contributor to various diseases, with conditions such as gum disease and tooth decay being linked to chronic illnesses.

Oil pulling has been found to be highly effective in whitening teeth, healing gums, preventing bad

breath, reducing inflammation, and treating oral infections. Additionally, it may aid in managing other health conditions, including asthma, diabetes, migraines, and chronic illnesses. [10].

CONCLUSION

Oil pulling therapy is an ancient Ayurvedic practice that enhances both oral and overall health by incorporating oil-based rinses into daily oral hygiene routines12. Recent studies have highlighted its various health benefits, supporting its relevance in modern oral care. As a complementary practice alongside tooth brushing and flossing, oil pulling can contribute to maintaining optimal oral hygiene. In rural communities and developing countries where access to dental care, including toothbrushes, toothpaste, and mouthwashes, remains limited, oil pulling offers an affordable and accessible alternative to improve oral health outcomes[13].

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