

Home remedies used for toothache: an institutional survey in a dental hospital at Vadodara, India

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Abstract

Use of home remedies as a first line of treatment to relieve the toothache is prevalent since ancient times. Various house hold materials are used as pain relievers for dental pain in India such as, cloves, salt and asafoetida. This survey was undertaken to find the prevalence of usage of home remedies to relieve dental pain among the patients coming to Manubhai Patel Dental College and Hospital, Vadodara. The study was a questionnaire-based survey, which included 200 survey participants with informed consent. Printed version of questionnaire was given to each study subject to enter the details of survey with necessary explanations. Results obtained were expressed in counts and percentages. The data analysis was done using the SPSS 12.0.1 version software. Statistical relationships between the variables were analysed using paired t-test and one-way analysis of variance (ANOVA). For all statistical methods, significance was set at $p < 0.05$.

As much as 45% of the participants had used one or more home remedy. Combinations of hose hold products were used in largest frequency (25%), followed by clove (11%) and tobacco, areca nut and related products (5%). 60.5 % of the survey population agreed to the fact that home remedies provide only symptomatic relief. Few participants (11%) also reported adverse effects of home remedies. We conclude that home remedies give temporary relief from dental pain. They are not completely free of adverse effects; they may cause delay in seeking professional care which may worsen condition of the offending tooth.

Keywords: Adverse effects, Dental pain, Home remedies, India, Survey

Introduction

Toothache is one of the most disturbing and unpleasant sensation. Studies show that the people of low socioeconomic status prefer to proceed with self-care

strategies before it becomes mandatory for them to seek professional care for dental pain.^[1] In a developing country like India, due to cultural beliefs, poor socioeconomic status, relatively high cost of modern medicines and lack of oral health awareness, many individuals use home remedies as a first line of treatment for toothache.

One of the prescriptions used by people of ancient china to alleviate the dental pain was as follows: “Roast a bit of garlic and crush it between the teeth; mix with chopped horseradish seeds or saltpetre; make into a paste with human milk; form pills and introduce one into the nostril on the opposite side to where the pain is felt”.^[2] Thus, usage of various house hold remedies to alleviate the dental pain is prevalent since ancient times worldwide.^{[2],[3]} Application of asafoetida to devitalize the tooth, application of opium or oil of cloves to carious cavities, use of ice, salt water, turmeric etc have been described as remedies used by patients to get relief from dental pain in various studies.^{[1],[3],[4],[5]} However, many times these house hold medicaments fail to give relief from toothache. Furthermore, many home remedies also show adverse effects such as stomatitis, mucosal ulcers etc. There is not much literature about usage of different home remedies among the population in the city of Vadodara, Gujarat, India. Thus, the survey was undertaken with the aim to assess the frequency of usage of various home remedies among the patients coming to Manubhai Patel Dental College and Hospital, Vadodara, India.

Material and methods

The research protocol was reviewed and approved by the institutional ethical committee. The study was conducted as a questionnaire based institutional survey. The patients reporting to the outpatient department of Manubhai Patel Dental College and Hospital, Vadodara, India in the

duration of one month were verbally explained about the purpose of the survey. All those individuals who suffered from dental pain at least once in their lifetime included in the study. They were requested to participate in survey with informed consent. The individuals, who did not suffer from any kind of dental pain in past, were excluded. Thus, a total of 200 patients were included in this study. Printed version of the questionnaire was distributed to patients with appropriate instructions and necessary help. The questionnaire constituted a total of 15 questions including demographic data of the patient, type of home remedy used for dental pain, evidence of recurrence of pain after usage of home remedy etc.

The questionnaire was evaluated by three senior faculty members from the institution for face validity. Before conducting the final survey, a pilot survey was undertaken. Based on pilot survey, Cronbach alpha value was found as 0.92. This showed good internal reliability of the survey questions.

Statistical analysis

The data thus obtained was tabulated and expressed in counts and percentage. The data analysis was done using the SPSS 12.0.1 version software. Statistical relationships between the variables were analysed using paired t-test and one way analysis of variance (ANOVA). For all statistical methods, significance was set at $p < 0.05$.

Results and discussion

The survey population comprised of 200 participants from age between 10 years and 90 years [Figure 1]. Total 90 among 200 participants (45%) admitted that they used one or more home remedies to get relief from toothache, whereas remaining 110 (55%) did not attempt the use of any home remedy to relieve dental pain [Figure 1,2]. In both categories, i.e. individuals who used home remedy and those who did not use home remedy, maximum number of persons were from 3rd and 4th decades of life.

However, the difference was statistically not significant, as assessed by paired t test ($p=0.66$).

Among the survey subjects 81 were males and 119 were females [Figure 2]. It was apparent that more number of females are indulging in usage of home remedies compared to males. This difference was statistically analysed by one way ANOVA test, which showed that the difference is statistically not significant ($p=0.54$).

Table 1 shows various home remedies practiced by the subjects of our survey. It was found that maximum number of patients used various combinations of different home remedies without tobacco, areca nut and related products (25%). Clove, either in a form of oil or a powder was also noted to be used by a large number of people as a remedy for toothache (11%). 10 (5%) people reported that they use only tobacco, areca nut and related products as medicament. Other home remedies reported were salt, warm saline rinse, neem stick, topical balm, pulling of lemon juice or sesame oil etc [Table 1].

121 out of 200 (60.5%) gave opinion that home remedies provide temporary relief from toothache. 22 out of 200 (11%) reported that they experienced ill-effect from the home remedy used by them. No relief from pain and increase in intensity of pain, sudden appearance of swelling, mucosal burning sensation and ulcerations were main adverse effects noted [Table 2]. 85 of the survey population (30.5%) believed that usage of home remedy delays the professional dental care, which may worsen the condition of the offending tooth.

Vadodara is an urban place with dental teaching institutes, many charitable dental hospitals and numbers of private dental offices. Despite of this fact, our study showed that 45% of the survey population used one or more home remedy to get relief from the toothache. This suggests that a considerable part of the population prefer to use home remedies over professional dental care at first place. This

result is similar to previously published studies from other developing and developed countries.^{[3],[4]} It appears that the practice of using home remedies for dental pain is prevalent worldwide irrespective of the economic status of the country.^[1]

In the present study it appears that more number of females are indulging in use of home remedies than males. However, this difference is statistically not significant (One way ANOVA; $p = 0.54$). It suggests that age and gender do not influence the usage of home remedies. The result of the study is quite contrasting to Adedapo et al, who reported more number of females indulging in use of home remedies.^[4] In India, this finding could be reasonably explained by the fact that females are more indulged in household works such as cooking, thus they prefer usage of readily available material at home such as cloves or salt. However, there may be other factors which may also contribute to use of home remedies in males such as, lower education level, psychological and cultural beliefs, low income and fear of dental procedures. Thus it can be said that in India, usage of home remedies is practiced irrespective of age or gender of a person.

Combinations of various household materials were the most commonly reported home remedy for dental pain in our survey. Among various home remedies used alone, clove was the most commonly used one. Clove is widely used in India as spice and condiment to give flavour and fragrance to food. It is used as a dried flower bud, in powder form or in oil form. Clove is known for its pain relieving properties. It contains eugenol, which has peripheral anti-nociceptive effect.^[6] However, its prolonged contact with mucous membrane may cause hypersensitivity and mucosal burning sensation.^{[7],[8]}

Sesame oil pulling was found to be attempted as medication in one case in our study. Oil pulling therapy is an ancient ayurvedic remedy described for detoxification

of mouth and prevention of oral diseases.^[9] It has been described that saponification of the oil in saliva possibly enhances the cleansing action of the mixture of saliva and oil. Thus it may act up on the process of plaque formation and may prevent oral diseases like gingivitis and dental caries.^[10] However, there is no analgesic or anaesthetic property in sesame oil. It doesn't exhibit antibacterial effect. Thus, the use of oil pulling therapy for symptomatic relief of dental pain is inappropriate.

Other home remedies such as salt, warm saline gargles, topical balm, lemon juice and neem stick has very little and temporary effect, if any, on dental pain.

It was found in the present study that approximately 11% people use tobacco, areca nut and related products like Gutkha and Mawa as a remedy for toothache. Daniel AB et al in their study, found similar results. They found the prevalence of tobacco use as 17.5%. They reported that the most common reason for usage of smokeless tobacco is to relieve toothache.^[11] This may enhance the number of persons indulging in the habit of tobacco and areca nut consumption, which may put them at risk of developing oral potentially malignant disorders or even tobacco related oral squamous carcinomas.

22 out of 200 persons (11%) reported various adverse effects due to usage of home remedies. Important adverse effects observed were increase in pain, swelling, mucosal burning and ulceration. When a carious cavity with pulpal exposure is packed with home remedy, the intrapulpal pressure may increase, which may be the reason for increase in dental pain after usage of self-care house hold medication. Appearance of swelling was mostly associated with warm saline gargles and application of hot fomentation. Increase in temperature may enhance the ongoing inflammatory process, which results in sudden swelling after application of heat. Mucosal burning and ulceration were reported mostly in cases where clove

powder was used as a medication. The sites of mucosal burning or ulceration were corresponding to the sites of placement of clove powder in these cases. Thus, we assume that prolonged contact of cloves with mucosa results in mucosal irritation due to its significant eugenol content. This result can be supported by reported cases of adverse reactions due to eugenol.^[9] The cytotoxicity of eugenol has also been reported by in vitro and animal experiments.^{[10],[11]} Our results suggest that home remedies are not free of adverse effects. It is inappropriate to use home remedies without knowledge of their mechanism of action and possible adverse effects.

Among those who used home remedies to alleviate toothache, maximum number of persons reported that pain reappeared after few minutes to hours, after usage of home remedies. 60.5% of persons agreed to the fact that the effects of home remedies are short-lived. 86 of the 90 persons had to report to the professional dental care provider because they didn't get complete relief from toothache with the use of home remedy. 42.5% admitted that usage of home remedy contributed to delay in seeking professional care for their dental pain, which worsened the condition of the tooth. However, remaining 57.5% did not agree to this. These results show that usage of home remedies, due to their temporary effects, unnecessary delays the professional treatment for dental problems. It is unfortunate that a large part of the population in India is unaware about the possible ill-effects of home remedies. This lack of knowledge may result in delay in procuring the professional care for dental problems, which results in compromised oral health.

Similar surveys with more number of questions and with a larger sample size can show interesting facts regarding usage of home remedies in general population. Surveys encompassing the larger parts of a single state or parts of different states may also give opportunity to compare the

self-care strategies employed for dental pain by populations of different areas, cities or states.

Conclusion

Our study shows that usage of home remedies to alleviate dental pain is widely used. The majority of the respondents of this survey admitted that home remedies give temporary relief from dental pain. Use of home remedies not only causes delay in professional dental treatment, but it can also worsen the condition of the offending tooth. Many house hold remedies may cause side effects. Similar studies including more number of subjects and in various ethnic populations are warranted to know their self-care strategies for toothache. Results of such surveys may be of great help to educate the population to explain the limitations of home remedies as medications and to explain the importance of professional dental care.

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Legends Tables and Figure

Table 1: Various home remedies used to alleviate dental pain

Home remedies used to relieve toothache	Number of users n (%)
Clove	22 (11.00)
Salt	06 (03.00)
Lukewarm water	08 (04.00)
Neem stick	04 (02.00)
Topical Balm	02 (01.00)
Lemon juice	01 (0.50)
Sesame oil	01 (0.50)
Tobacco, areca nut and related products (Without any other home remedy)	10 (05.00)
Combinations (with tobacco, areca nut and related products)	11 (05.50)
Combinations (without tobacco, areca nut and related products)	25 (12.50)
Total	90 (45.00)

Table 2: Failure of remedy and adverse effects experienced by home remedies

Failure of remedy and adverse effects due to home remedies	Reported by number of users
Pain not relieved	11
Pain aggravated	5
Swelling	3
Reduced mouth opening	1
Burning sensation	1
Burning sensation followed by ulcer	1
No adverse effects	68
Total	90

Figure Legends

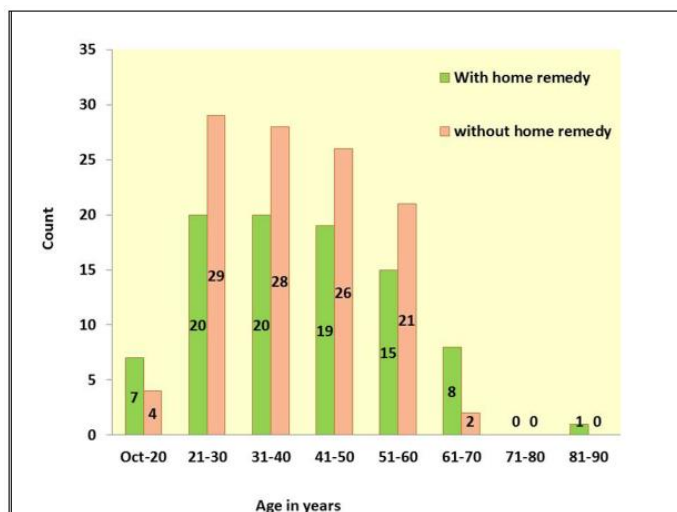


Figure 1: Age wise distribution of survey population (N = 200).

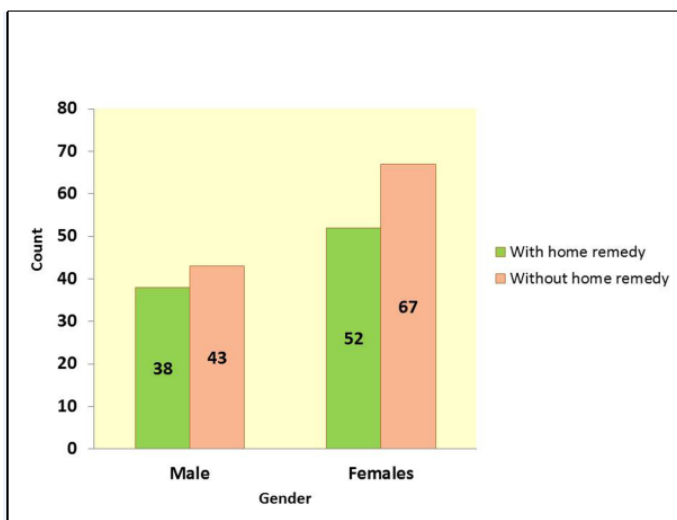


Figure 2: Gender wise distribution of the survey population (N = 200)