## **Original Article**

# **Home Remedy for Dental Pain during Lockdown**

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## **Abstract**

Context: Since the coronavirus disease 2019 (COVID-19) outbreak was declared a pandemic on March 11, 2020. several dental care facilities across countries have been completely closed or have been only providing minimal treatment for emergency cases. The primary objectives of the study were to explore the awareness and utilization of home remedies for dental pain during the lockdown. Aims: The main aim of the study is to assess the attitude, knowledge, awareness, and utilization of home remedies for dental pain during lockdown. Settings and Design: Cross-sectional study. Materials and Methods: An online questionnaire (Google Form) consisting 16 questions related to awareness, attitude toward and utilization of home remedies for dental pain was distributed through online platforms. Statistical Analysis Used: Data were collected and analyzed using the SPSS software. Bivariate analysis (Chi-square test) was used to assess the association between the independent variables with each of the main outcomes of interest. Results: Four hundred and seventeen responses were collected which included 204 males and 213 females. Dental pain was the most common dental problem faced by the study population, 68.5% were aware of home remedies and 56.5% had experienced relief from dental pain. Twenty-one percent rural study participants said that home remedy for tooth pain is better than conventional treatment. Conclusions: The surveyed population adopted home remedies as a first line of treatment for temporary relief from the dental pain. During the lockdown. Although it should be stated that majority preferred conventional treatment for permanent relief from the dental pain. During the lockdown due to the COVID-19 pandemic, the general public had little or in some remote areas no other choice but to follow the traditional methods to relieve their pain temporarily.

Keywords: Alternative medicine, coronavirus disease 2019, dental pain, home remedies, oral health, lockdown

#### **INTRODUCTION**

Despite considerable improvements in oral health care delivery, dental pain is acknowledged as a common symptom of oral disease.<sup>[1]</sup> It has been reported as the predominant and most common reason for visiting a dentist by numerous studies done over the years.<sup>[2,3]</sup> According to a systematic review done by Pentapati *et al.*, the prevalence of dental pain across many countries ranged from 1.33% to 87.8%.<sup>[4]</sup> Studies included in this review from India (40.4%), China (41.3%), and Iran (42.6%) reported high pooled prevalence estimates of dental pain.<sup>[4]</sup>

Dental pain and other oral health problems have a significant impact on daily activities and quality of life across all age groups. A systematic review done by Oghli *et al.* reported a moderate impact for the pain dimension of oral health-related quality of life (OHRQOL) in adult patients with common orofacial pain conditions.<sup>[3]</sup> A recent systematic review highlighted the important functional and psychological effects of untreated dental pain in children.<sup>[5]</sup> Dental pain has been

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reported to have a negative impact on eating, sleeping, learning, and difficulty performing their daily activities.<sup>[5]</sup>

A recent study found that higher self-perceived dental pain and longer duration of suffering negatively impacted the OHRQOL of individuals during the coronavirus disease 2019 (COVID-19) pandemic. [6] Ever since the first case of COVID 19 was reported on December 31, 2019, the world has been facing an unprecedented health crisis. The Director-General of the World Health Organization (WHO) declared COVID-19 outbreak a pandemic on March 11, 2020. The first case of COVID-19 in India was reported on 30 January 2020. [7] Following which, on March 24, 2020, the Government of India ordered a nationwide lockdown for

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21 days, limiting movement of the entire 1.3 billion population of India as a preventive measure against the COVID-19 pandemic in India.<sup>[8]</sup>

Several prohibitions were set in place to prevent and control the community transmission of the novel COVID 19 virus. As SARS-CoV-2 infection transmission is mainly by respiratory droplets, the dental care workers are at high risk of getting infected during nasopharyngeal examination and treatment procedures. <sup>[9]</sup> The aerosols generated during dental procedures increase the risk of disease transmission to patients. The ministry of Healthy in India issued an advisory for dentists in May 2020 to restrict the dental only to urgent and emergency procedures. <sup>[10]</sup> The WHO; furthermore gave similar guidelines on August 3, 2020. <sup>[7]</sup>

Majority Oral Health Care Services in India were closed during the lockdown to prevent the transmission of the virus. This led to inaccessibility of greater part of the dental services across the nation for the dental emergencies. The fear of COVID-19 prevented people from seeking professional dental services. This in turn paved the way for the utilization of alternatives like home remedy or traditional medicine to minimize the pain caused by oral health problems.

Several surveys and review articles have shown that home remedies are widely used for various health problems including oral health in India. [11-15] The extensive usage is attributed to confidence in the remedy, ease of use and access, lack of time to seek professional help, cultural beliefs, poor socioeconomic status, relatively high cost of modern medicines, side effects and interactions of pharmacological treatment and lack of oral health care awareness in many parts of the country. [11-15] The specific reason for usage of alternative remedies during the lockdown could be the closure of clinics and restriction on over the counter pain medications. [6]

Like any therapy or treatment modality, home remedies have benefits along with side effects, limitations and adverse interactions reported by several authors. [16-19] There is a need to increase the availability of reliable information and evidence on usage of "home remedies" for dental practitioners. Therefore, this survey was done to study the level of awareness; self-reported utilization, efficiency, and side effects related to home remedies for dental pain. Furthermore, this study explored the sociodemographic factors of the study subjects associated with the questions related to utilization, awareness, and self-reported efficiency.

# MATERIALS AND METHODS

## **Ethical approval**

Ethical approval for this study was obtained from the Institutional Scientific Review Board. We obtained a written informed consent from all participants, and the anonymity of the participants was maintained.

#### Questionnaire

The questionnaire was developed and pretested on a sample of 30 participants to test the validity and reliability of the

questionnaire. The responses of these participants were excluded from the main study. The final and validated version was developed. It consisted of 16 questions of which, 5 were concerning the sociodemographic characteristics and 11 questions regarding the (1) self-reported utilization, (2) self-reported efficiency and (3) self-reported side effects related to the home remedies for dental pain.

#### Study population and data collection

Google form was utilized to collect the data using a link that was circulated through various social platforms such as WhatsApp, Facebook, and Instagram. The questionnaire was collected from December 07, 2020 to January 15, 2021. Participants had to be 18 years or older to be included in the survey. Participation in the survey was taken as implied consent.

## Statistical analysis

Responses were coded and entered into an SPSS database. Data were entered in Microsoft Excel spreadsheet and analyzed using the SPSS software (version 21, IBM Corporation, Texas, USA). Descriptive statistics were conducted. Bivariate analysis (Chi-square test) was used to assess the association between independent variables with each of the main outcomes of interest.

## RESULTS

Table 1 describes the characteristics of the study subjects. Majority of our study subjects (64.0%) belonged to the age group of 18–30 years, while 22.0% and 14.0% belonged to the 31–50 and >50 years age groups, respectively. About 49.0% were male and 51.0% study subjects were female. Study participants that belonged to rural and urban areas were 49.2% and 50.8%, respectively. Most study participants had completed graduation or attained higher education (70.7%).

Figure 1 shows the types of home remedy used for dental pain reported by the study subjects. Clove was reported to be used by 43.2% of the study subjects, 23.7% participants said they used warm saline, 2.6% participants used cold compression as home remedy for dental pain. Only 2.1% participants used crushed garlic and 1.7% participants used steam to relieve dental pain. About 18.1% stated that they used all the remedies

Table 1: Characteristics of the study participants				
Variable	Categories	n (%)		
Age	18-30	267 (64.0)		
	31-50	92 (22.0)		
	>50	58 (14.0)		
Gender	Male	204 (49.0)		
	Female	213 (51.0)		
Location	Rural	205 (49.2)		
	Urban	212 (50.8)		
Level of	Illiterate	72 (17.3)		
education	Completed school	50 (12.0)		
	Graduate or higher	295 (70.7)		

mentioned. However, 7.4% stated that they did not use any of the mentioned home remedies.

Majority of the study subjects (69.1%) were aware of home remedies for dental pain and 14.4% said they were not aware of home remedies for dental pain. About 56.6% of the respondents said they had relief from dental pain using home remedies. Of these 236 subjects, 18% experienced immediate relief from dental pain using home remedies. About 29.7% said home remedies for dental pain are more effective than conventional treatment. Only 16.1% of the respondents experienced side effects after using home remedies [Table 2].

Table 2: Responses to the questions about the perceptions and practice related to home remedies for dental pain

Questions	Responses	n (%)
Are you aware of home	Yes	288 (69.1)
remedies?	No	60 (14.4)
	May be	69 (16.5)
Does it relieve pain?	Yes	236 (56.6)
	No	47 (11.3)
	May be	134 (32.1)
How long does it take to	Immediately	75 (18)
relieve pain?	After sometimes	342 (82)
How effective is it?	Less effective	272 (65.3)
	More effective	124 (29.7)
	Not effective at all	21 (5)
Do home remedies for dental	Yes	67 (16.1)
pain cause side effects?	No	350 (83.9)
Home remedy for dental pain	Yes	51 (12.2)
is effective for swelling/pus?	No	259 (62.1)
	May be	107 (25.7)
Who recommended you to try	Professional	46 (11)
home remedy for dental pain?	Commoner	250 (60)
	Self	121 (29)
Do you think home remedy	Yes	75 (18)
is better than conventional	No	236 (56.6)
treatment	May be	106 (25.4)

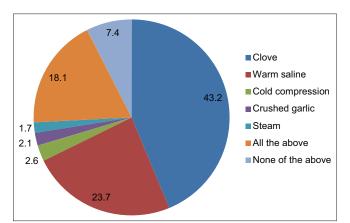
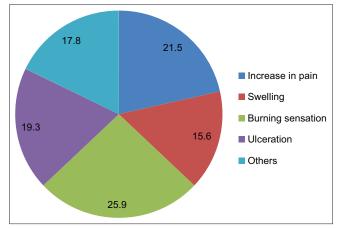


Figure 1: Types of home remedy used for dental pain reported by the study participants

Figure 2 shows the side effects of home remedies for dental pain as reported by the study subjects. Nearly, 21.5% participants reported experiencing increase in pain, 15.6% participants reported swelling, 25.9% participants reported Burning sensation and 19.3% participants reported ulceration. About 17.8% participants reported side effects other than those mentioned such as bleeding from gums, bad breath, sore or swollen gums, numbness in tongue, tissue irritation.

Table 3 shows the responses to the questions and associations between responses and characteristics of the participants. More than 80% study subjects belonging to the age group of 31-50 years and >51 years were aware of home remedies when compared to 61.0% study subjects belonging to the 18–30 years of age group (P < 0.001). About 64.9% and 89.7% participants from the rural area and >51 years of age said that home remedies helps in relieving the dental pain, while only 48.6% and 39.7% study subjects from urban regions and subjects belonging to 18–30 years of age said home remedies help in relieving dental pain (P < 0.003 and P < 0.001 respectively). Only 12.7% of the urban population in this study believed that home remedy relieves pain immediately when compared to a higher number of study subjects in rural regions (23.4%) (P < 0.006). A higher number of urban study subjects (19.8%) said that home remedies cause side effects while only 12.2% of rural study subjects believed that home remedies had any side effects (P < 0.03). Nearly 73% and 63% of the subjects belonging to the 31–50 and >51 years of age group respectively said that home remedies are not effective for swellings or pus discharge while a lower number of 18-30 age group study subjects (57.7%) were in agreement (P < 0.001). Majority of the study subjects across the place of origin and age groups were recommended to use home remedies by a commoner. However, more study subjects belonging to the rural places and those belonging to the >51 years of age group said they were recommended to use home remedies by a commoner when compared to urban subjects and subjects in the 18–30 age group (P < 0.001).



**Figure 2:** Side effects of home remedies for dental pain as reported by the study participants

Abdullah, et al.: Home remedies for dental pain

Item	Responses	Rural, <i>n</i> (%)	Urban, <i>n</i> (%)	$\chi^2$	Р	18-30, n (%)	31-50, n (%)	>50, n (%)	$\chi^2$	P
Are you aware of home remedy?	Yes	138 (67.3)	150 (70.8)	1.439	0.487	163 (61.0)	77 (83.7)	48 (82.8)	37.697	0.000
	No	34 (16.6)	26 (12.3)			45 (16.9)	7 (7.6)	8 (13.8)		
	May be	33 (16.1)	36 (17.0)			59 (22.1)	8 (8.7)	2 (3.4)		
Does it relieve pain?	Yes	133 (64.9)	103 (48.6)	11.437	0.003	106 (39.7)	78 (84.8)	52 (89.7)	68.085	0.000
	No	21 (10.2)	26 (12.3)			32 (12.0)	10 (10.9)	5 (8.6)		
	May be	51 (24.9)	83 (39.2)			129 (48.3)	4 (4.3)	1 (1.7)		
How long does it take	Immediately	48 (23.4)	27 (12.7)	7.450	0.006	37 (13.9)	22 (23.9)	16 (27.6)	3.617	0.164
to relieve pain?	After sometimes	157 (76.6)	185 (87.3)			230 (86.1)	70 (76.1)	42 (72.4)		
How effective is it?	Less effective	132 (64.4)	140 (66.0)	0.929	0.629	185 (69.3)	58 (63.0)	29 (50.0)	2.317	0.678
	More effective	61 (29.8)	63 (29.7)			71 (26.6)	28 (30.4)	25 (43.1)		
	Not effective at all	12 (5.9)	9 (4.2)			11 (4.1)	6 (6.5)	4 (6.9)		
Does it cause side effect?	Yes	25 (12.2)	42 (19.8)	4.676	0.031	43 (16.1)	15 (16.3)	9 (15.5)	3.097	0.213
	No	180 (87.8)	170 (80.2)			224 (83.9)	77 (83.7)	49 (84.5)		
Home remedy effective for swelling or pus discharge?	Yes	30 (14.6)	21 (9.9)	2.084	0.353	30 (11.2)	10 (10.9)	11 (19.0)	22.389	0.001
	No	125 (61.0)	134 (63.2)			154 (57.7)	68 (73.9)	37 (63.8)		
	May be	50 (24.4)	57 (26.9)			83 (31.1)	14 (15.2)	10 (17.2)		
Who recommended	Professional	18 (8.8)	28 (13.2)	7.979	0.019	29 (10.9)	10 (10.9)	7 (12.1)	12.585	0.013
home remedy?	Commoner	137 (66.8)	113 (53.3)			153 (57.3)	56 (60.9)	41 (70.7)		
	Self	50 (24.4)	71 (33.5)			85 (31.8)	26 (28.3)	10 (17.2)		
Is home remedy better than conventional treatment?	Yes	43 (21.0)	32 (15.1)	2.993	0.224	39 (14.6)	20 (21.7)	16 (27.6)	13.068	0.001
	No	115 (56.1)	121 (57.1)			137 (51.3)	58 (63.0)	41 (70.7)		
	May be	47 (22.9)	59 (27.8)			91 (34.1)	14 (15.2)	1 (1.7)		

About 86.1% and 84.7% illiterate participants said that they are aware of home remedies and that they believed it relieves dental pain respectively. However, only 63.7% and 48.8% graduate participants were aware of home remedies and said it provides relief of dental pain respectively (P < 0.008 and P < 0.001 respectively). When asked "if home remedy was better than conventional treatment," 26.0% subjects who completed school agreed while only 19.4% illiterate and 16.3% graduate study subjects said home remedy was better than conventional treatment (P < 0.001) [Table 4].

## DISCUSSION

According to the WHO, as many as 80% of the world's people depend on traditional medicine (herbal) for their primary healthcare needs. [13] In the present study, 69.1% of study subjects reported to using home remedies for dental pain. Our findings were in agreement with two previous studies. [18-20] However, in comparison to a few Indian and international studies, the use of home remedies was higher in our study. [11,21,22] This might be explained by the fact that due to the current pandemic situation, the limitation to visit a dental professional has brought back the use of home remedies to alleviate the dental pain.

#### Socio demographic characteristics

Literature reveals that the utilization of dental services among the rural population in India is alarmingly low. [2,11,23] This means that the rural population is more likely to self-care or home remedies to relieve dental pain or other oral health problems. However, we found that the difference in the utilization

of home remedies between the rural and urban population during the lockdown was not significantly different. In this study, 86.1% of study subjects who were Illiterates agreed to the usage of home remedies while only 63.7% of graduates said they had used home remedies for dental pain. Similarly, 84.7% of the illiterate study subjects said that home remedies give relief to dental pain in comparison to 48.8% of graduates. These findings were statistically significant.

#### Awareness of home remedy

In the present study, 14.4% subjects were not aware of home remedies. This was low in comparison to the study results of Pavithra *et al.* wherein 27.3% were not aware of home remedies. [18] This could be attributed to the higher percentage of rural population in the sample of our study.

## Relief from dental pain

In our study, about 56.6% of study subject reported that they experienced relief from dental pain by using home remedies, about 32.1% of our study subjects were of the opinion that usage of home remedies may or may not relieve dental pain. Of the 236 subjects who experienced relief from dental pain by using home remedies, 18.0% of study subjects said they had immediate relief and 82.0% said the pain was relieved only after sometime. According to Shah *et al.* and Pavithra *et al.*, 60.5% and 63.6% of the subjects in their stated that home remedies provide temporary relief from toothache respectively. [15,18] Singh *et al.* reported that 41.7% of the study subjects relied on home remedies to relieve the dental pain during lockdown. [24]

Item	Response	Illiterate	Completed school	Graduate or higher	$\chi^2$	P
Are you aware of home remedy	Yes	62 (86.1)	38 (76.0)	188 (63.7)	13.763	0.008
	No	6 (8.3)	6 (12.0)	48 (16.3)		
	May be	4 (5.6)	6 (12.0)	59 (20.0)		
Does home remedy relieve	Yes	61 (84.7)	31 (62.0)	144 (48.8)	32.327	0.001
dental pain?	No	6 (8.3)	4 (8.0)	37 (12.5)		
	May be	5 (6.9)	15 (30.0)	114 (38.6)		
How long does the remedy	Immediately	16 (22.2)	10 (20.0)	49 (16.6)	0.399	0.819
take to relieve the pain?	After some times	56 (77.8)	40 (80.0)	246 (83.4)		
How effective is it?	Less effective	48 (66.7)	35 (70.0)	189 (64.1)	1.093	0.895
	More effective	20 (27.8)	13 (26.0)	91 (30.8)		
	Not effective at all	4 (5.6)	2 (4.0)	15 (5.1)		
Does it cause any side effect?	Yes	8 (11.1)	4 (8.0)	55 (18.6)	5.522	0.063
	No	64 (88.9)	46 (92.0)	240 (81.4)		
Home remedy effective for swelling or pus discharge?	Yes	13 (18.1)	9 (18.0)	29 (9.8)	5.210	0.266
	No	45 (62.5)	31 (62.0)	183 (62.0)		
	May be	14 (19.4)	10 (20.0)	83 (28.1)		
Who recommended home remedy?	Professional	8 (11.1)	5 (10.0)	33 (11.2)	5.097	0.278
	Commoner	49 (68.1)	33 (66.0)	168 (56.9)		
	Self	15 (20.8)	12 (24.0)	94 (31.9)		
Is home remedy better than conventional treatment?	Yes	14 (19.4)	13 (26.0)	48 (16.3)	18.035	0.001
	No	53 (73.6)	24 (48.0)	159 (53.9)		
	May be	5 (6.9)	13 (26.0)	88 (29.8)		

## **Effectiveness of home remedy**

A significant finding of our study is that while the majority of people were agreed that home remedies are less effective than conventional dental treatment, 29.7% believed that home remedy is more effective to relieve dental pain than conventional dental treatment. These are in accordance to the study results of Shah *et al.* and Singh *et al.*[15,24] Contrasting results were reported in the survey by Pavithra *et al.*, where 41.8% subjects agreed that home remedy is better than the conventional method and only 25.5% of study subjects agreed that they required conventional method for permanent relief from dental pain.<sup>[18]</sup>

#### Types of home remedies

Similar to the findings of the past surveys, even in our study we found that Clove (43.2%) is most commonly used home remedy followed by warm saline (23.7%) and cold compression (2.6%). Shah *et al.* noted that clove is the most recommended home remedy for dental pain and can be used as a measure to control the progression of dental infection. [15] In contrast to this, Pavithra *et al.* found that only 16.67% of the study participants suggest clove as home remedy for dental pain. [18]

## **Reported side effects**

Interestingly only 16.1% of our study participants experienced adverse effects due to usage of home remedies. Of these participants, Majority reported adverse effects such as increase in intensity of pain, sudden appearance of swelling, mucosal burning sensation and ulcerations. However, our findings were higher in comparison with a previous study, wherein only 11%

reported ill effects such as ulceration and burning sensation due to usage of home remedy.<sup>[15]</sup> Literature shows that prolonged contact of oral tissues with Clove which contains eugenol may cause hypersensitivity and mucosal burning sensation.<sup>[17]</sup>

## Limitation of the study

The major limitation is the small and convenient sample size of the population that was surveyed for this study. Therefore, this sample may not be representative of and thus generalizable to the entire population of the country. However, this sample is representative of the regional population. Another significant limitation of the survey may be the relatively short study duration due to the lack of resources.

The numbers of questions were kept to a minimum so as to encourage participation and increase the response rate. A more elaborate and detailed questionnaire about the home remedies used specifically for different oral diseases could help study the utilization of home remedies in detail.

#### **Future scope**

Future studies should be conducted on larger populations to ascertain generalizability.

#### CONCLUSION

Within the limitations of the study, it can be concluded that the surveyed population adopted home remedies as a first line of treatment for temporary relief from the tooth pain during the lockdown. Although, it should be stated that majority preferred conventional treatment for permanent relief from the dental pain. We would also like to highlight that in a unique situation such

as the lockdown due to the COVID-19 pandemic, the general public had little or in some remote areas no other choice but to follow the traditional methods to relieve their pain temporarily.

It cannot be ignored that there is a significant gap in the reliable scientific evidence on the effectiveness, adverse effects and usage of traditional home remedies. Bearing in mind the indicated high use of home remedies for dental pain, dental practitioners may benefit from access to reliable data concerning the benefits and risks associated with usage of these remedies in the oral cavity.

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#### **Conflicts of interest**

There are no conflicts of interest.

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