

Evaluation of Parents' Knowledge and Attitude towards Self-Medication to Dental Problems in their Children during COVID-19 Pandemic in India

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ABSTRACT

Introduction: Majority of the population residing in less developed parts of our country are very poorly informed about oral hygiene measures and dental facilities available. For them over the counter drugs remains the most important way of medicating without prescription. Although there are studies determining the practice of self-medication in adults but hardly few have been done specifically for children and their dental ailments. Nationwide lockdowns and apprehension of contracting Covid-19 have majorly contributed to such practices. Therefore, the objective of our study was to gather information about the dental problems encountered with children, regularly used medications for those problems, and the frequency of self-medication practice during COVID-19 pandemic.

Material and methods: A survey was conducted among 416 parents throughout India. Data were collected through a specially designed proforma using a closed-ended, self-administered validated questionnaire containing 15 questions.

Results: Majority of the parents with children aged 8-13 years answered the questionnaire and the most frequently encountered problem by them was tooth-ache followed by swelling, dental caries and bad breath. Though most of the parents agreed that medicines should always be administered with proper prescription, 30% parents stated that self-medication is a safe practice especially during COVID-19 pandemic. Local drug stores and friends & family influence played a major role in self-medication for oral health problems.

Conclusion: During the pandemic parents felt safe to use over the counter drugs and self-medicate their children for dental problems rather than visiting dental clinics due to fear of contracting COVID-19.

Keywords: Self-medication, Oral Health Problem, Toothache, Antibiotics, Children, COVID-19

times of COVID-19 pandemic. So, if the results reassure them that it isn't serious, they may skip the doctor even if they should be getting medical attention.

Similar dilemma is encountered by parents of young children with various dental ailments during this pandemic. Hesitance to visit any dental professional due to fear of contracting infections themselves or by their children has reduced the frequency of patients visiting professionals and has given rise to the habit of self-medication. Benefits of self-medication include decreased frequency of physician visits, increased patient autonomy and reduced costs. At the same time these medical practices lack clinical evaluation of the condition by a trained medical professional, which could result in missed or wrongful diagnosis, delays of appropriate effective treatments or adverse drug interactions and increased risk of drug toxicity as a result of overdosing and may lead to the requirement of more complex treatment later on.

Under Schedule H1 of Drugs and Cosmetics Act (DCA), pharmacists have to maintain a record of all habit-forming medicine and potent third- and fourth-line antibiotics for at least three years but at the same time in India painkillers and antibiotics are easily available at local drug stores for patients to acquire.

It is a dangerous trend. The biggest problem is the misuse of antibiotics. People either take it for a longer duration than

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How to cite this article: Milit Y, Setty JV, Srinivasan I, Das A, Rajesh J. Evaluation of parents' knowledge and attitude towards self-medication to dental problems in their children during COVID-19 Pandemic in India. International Journal of Contemporary Medical Research 2022;9(4):D12-D16.



INTRODUCTION

Self-medication is defined by the WHO as "The selection and use of medicines by individuals to treat self-recognized illnesses or symptoms." ¹Though self-medication can be useful when used cautiously in case of emergency situations but it can also have undesired side effects and can sometimes create unpleasantness between doctors and their patients.

Nowadays, majority of the population has access to a smart phone and internet and have curiosity to get information through internet for a simple discomfort of headache to an unusual symptom of any disease.

It may be more convenient for people than scheduling a doctor's appointment, especially in these unprecedented

necessary or take it for ailments that do not require them, and take it on and off resulting in drug resistance.

In the dental profession, apart from fear & anxiety to dentists and dental treatments, toothache is the most likely symptom that may lead patients to self-medicate themselves.

Several personal factors could influence self-medication practices including sex, income, self-care orientation, and medication knowledge.² Though many studies have been done to determine the practice of self-medication in adults but hardly few studies have been done specifically for children and their dental ailments. Therefore, the current study was aimed to estimate the prevalence of self-medication for oral health problems among parents for their children during this pandemic across India and also to identify the factors that led to such practices during this pandemic.

MATERIAL AND METHODS

This questionnaire-based study received ethical clearance from Institutional Ethics Committee prior to its commencement. The questionnaire was tested for face validity by a panel of "experts" and modified in accordance with their recommendations to ensure comprehensive ability of parents being surveyed.

Eligibility criteria

Inclusion criteria

- 1) Parents' having children up to 13 years.
- 2) Parents who were willing to participate in the study.

Exclusion criteria

- 1) Parents' having children beyond the age group of 13 years.
- 2) Parents who were not willing to participate in the study.

Description of questionnaire

Data were collected using a specially designed Performa. It was a closed-ended, self-administered questionnaire containing 15 questions, in three sections. It was circulated to parents via different social media platforms.

First section of the questionnaire contained information related to demographic and socioeconomic details of the surveyed participants. Second section of the questionnaire contained 7 questions which were related to the knowledge and practices about self-medication related to oral health problems. Third section of the questionnaire contained 4 questions which were related to the attitude towards self-medication in relation to the oral health problems.

Sample size determination

$$N = \frac{Z_{(1-\alpha)}^2 \times P \times Q}{\delta^2}$$

$Z_{(1-\alpha)} = 1.96$ (For 95% Confidence Interval)

$P = 0.50$ [Based on the assumption that 50% of the parents had adequate knowledge and attitude towards self-medication for dental problems in their children during the COVID-19 Pandemic]

$Q = 1 - P$

δ (Margin of Error) = 0.05

$N = 384.14$, rounded off to 400

The total sample size $N = 400$

Duration of the study

The current study was conducted over a period of 6 months.

Statistical Analysis

Statistical Package for Social Sciences [SPSS] for Windows Version 22.0 Released 2013. Armonk, NY: IBM Corp., was used to perform statistical analyses.

Descriptive Statistics:

Descriptive analysis of all the explanatory parameters was done using mean and standard deviation for quantitative variables, frequency and proportions for categorical variables.

Inferential Statistics:

Chi Square Goodness of Fit test was used to compare the difference in the distribution of responses for the questionnaire among the study participants.

Independent Chi Square Test was used to compare the difference in the responses based on gender, education, previous dental visits and other important sample characteristic variables.

The level of significance was set at $P < 0.05$.

RESULTS

- A total of 416 participants successfully filled out the questionnaire.
- Out of the studied sample, majority of the responses (66.8%) were from parents with children between age of 8-13 years. (Table. 1)
- While 9.1% of the participants were from lower middle class and rest from upper middle class, this did not have any statistical significance for the habit of self-medication.³

While toothache (20.9%) was the most encountered problem during lockdown period with children, 77.9% parents did not consult any professional regarding this problem due to the fear of contracting infections while visiting health care systems, which was statistically significant. (Table. 2)

According to the responses 22.1% of the parents visited professionals for their children's dental problem as the child was in too much pain or it was an emergency situation for them. (Table. 2)

Parents were asked whether they self-medicated their children with over-the-counter drugs or not and if they did then what was the reason behind it. It was inferred that 38.5% parents did not self-medicate their child, as according to their response, risks of side effects of self-medication are not worth taking and they would prefer visiting the professional. Whereas from the studied sample parents who self-medicated their children gave the reason of fear of contracting infection while visiting the professional (23.8%) and for a small percentage self-medication was more economical and feasible. For 38.7% of the population reason was non availability of dentists during lockdown period. (Table. 3)

Antibiotics was the most frequently used medication for the dental ailments encountered, followed by painkillers,

Variable	Category	n	%
What is the age of your child?	0-4 years	56	13.5%
	4-8 years	82	19.7%
	8-13 years	278	66.8%
Family income per month	7000 INR	38	9.1%
	10000-25000 INR	61	14.7%
	> 25000 INR	317	76.2%
Qualifications of parents	Did not complete primary schooling	12	2.9%
	Complete Schooling	77	18.5%
	Graduate	178	42.8%
	Post graduate	149	35.8%

Table-1: Distribution of Sociodemographic characteristics among study participants

Question	Response	n	%	P-Value
What dental problems did you encounter in your child during lockdown?	Tooth ache	87	20.9%	<0.001*
	Swelling in the mouth	71	17.1%	
	Dental Caries	63	15.1%	
	Discoloration	13	3.1%	
	Bad Breath	36	8.7%	
	I did not encounter any dental problem with my child	146	35.1%	
Did you consult any professional for the dental problem? If yes, why?	Yes, early intervention has better outcome	53	12.7%	<0.001*
	Yes, child was in too much pain	39	9.4%	
	No, I did not consult	324	77.9%	

* - Statistically Significant

Table-2: Comparison of distribution of responses to the questions on dental problems seen in children during COVID pandemic using Chi Square Goodness of Fit test

Question	Response	n	%	P-Value
Did you self- medicate your children for that specific problem? If yes, why ?	Yes, It is more economical	48	11.5%	..
	Yes, It is more feasible	49	11.8%	
	Yes, It was an emergency situation	99	23.8%	
	Yes, due to non- availability of dentists	161	38.7%	
	Yes, Apprehension towards contracting infections in the clinic	99	23.8%	
	No, I did not self-medicate	160	38.5%	
	Yes, I am a doctor/ dentist	12	2.9%	
If yes, what medication did you give them?	Antibiotics	116	27.9%	<0.001*
	Painkillers	76	18.3%	
	Medication for fever	4	1%	
	Mouthwash / Toothpaste	56	13.5%	
	Mouth gels	13	3.1%	
	Not applicable	151	36.3%	
Did that medicine relieve the problem and what is the present status of the problem?	Yes, it is resolved	207	49.8%	<0.001*
	No, it is persistent	53	12.7%	
	No, it has aggravated	8	1.9%	
	Not applicable	148	35.6%	

* - Statistically Significant

Table-3: Comparison of distribution of responses to the questions on self-medication to the dental problems seen in children during COVID pandemic using Chi Square Goodness of Fit test

change in their current mouthwash/ toothpaste, mouth gels and antipyretics ($p < 0.001$). For most of the parents (49.8%) it resolved the concerned problem. (Table. 3)

Source of information regarding these medicines were mostly either from local drug stores, social media or advice from family and friends. Fortunately, in most cases they did

Question	Response	n	%	P-Value
Do you have in depth knowledge about that particular medication? If yes, how did you acquire it ?	Yes, through friends and family	72	17.3%	<0.001*
	Yes, from drug store	107	25.7%	
	Yes, through advertisement	13	3.1%	
	Yes, via Internet	41	9.9%	
	No, I didn't know about it	35	8.4%	
	Yes, followed old prescription	20	4.8%	
	Not applicable	128	30.8%	
Did you face any side effects of self-medication?	Yes	5	1.2%	<0.001*
	No	278	66.8%	
	Somewhat	12	2.9%	
	Not applicable	121	29.1%	
In case of allergic reaction to the medication, do you know what should be done and were the steps taken by you enough to treat the side effects?	Yes	31	7.5%	<0.001*
	No	237	57%	
	Not applicable	148	35.6%	
* - Statistically Significant				
Table-4: Comparison of distribution of responses to the questions on Parents' knowledge & awareness on self-medication to the dental problems using Chi Square Goodness of Fit test				

Question	Response	n	%	P-Value
Do you think self-medication is a safe practice for your child/children?	Yes, absolutely	32	7.7%	<0.001*
	Not sure	70	16.8%	
	No, it's not	149	35.8%	
	Only in emergency situations	165	39.7%	
Are the risks of side effects due to self-medication worth taking instead of visiting a professional?	Yes	46	11.0%	<0.001*
	Maybe	190	45.7%	
	No	180	43.3%	
If yes, how?	It is more economical than visiting a dentist	62	19.6%	<0.001*
	Side effects are not severe	37	11.7%	
	I have in depth knowledge about medications	22	7%	
	It is an easier option	84	26.6%	
	It relieves the problem quickly	111	35.1%	
* - Statistically Significant				
Table-5: Comparison of distribution of responses to the questions on Parents' Attitude towards self-medication to the dental problems using Chi Square Goodness of Fit test				

not face any side effects of the medicines. Majority of the subjects in our study had no knowledge on how to manage the side effects. (Table.4)

When asked in general about their mindset of self-medication habit, only 7.7% said that it is absolutely alright to self-medicate their child. Most of them preferred self-medication practice only in emergency situation while 35.8% did not take it as safe practice and 16.8% of them did not have any strong opinion about this topic. (Table. 5)

For those who preferred self-medication, they considered it mainly because it relieves the dental problem quickly and is an easier alternative to visiting healthcare system. (Table. 5)

DISCUSSION

Current study showed that a considerable percentage of surveyed population self-medicated their children during this COVID-19 pandemic. Non-availability of dentists during lockdown period in a way gave a boost to this practice.⁷ But, at the same time apprehension towards contracting infection if they go out was also a co-factor towards this habit. Similar results were also found in a study conducted by Muhammad Mansoor Majeed et.al., in 2021

to evaluate the fear and perception of people to visit dentists during covid-19 pandemic. They concluded that due to the fear of COVID-19, patients were not willing to visit dentists for treatments.²

Therefore, dentists should instill confidence in their patients by ensuring cross-infection control and taking precautionary measures.

In Nigeria another study was conducted by Anthony Ike Wegbom in 2021, to estimate the knowledge level, causes, prevalence, and determinants of self-medication practices for the prevention and/or treatment of COVID-19. They concluded that antibiotics/antimicrobial were the most widely used over the counter drugs for self-medication during the COVID-19 pandemic which was similar to our study.⁴ The finding of our study was in contrast with another study conducted by Ankita Jain et.al (2016) which concluded that analgesics for toothache was the most frequently used medicine in patients in their study. Whereas in the current study antibiotics were the most frequently used medication, The main reason identified for self-medication was motivation from relatives and friends in the study conducted by Ankita Jain et.al., and in the current study as well.⁵

Antimicrobial resistance is an incessant problem throughout the world especially in developing countries like ours where antibiotics are easily available without any prescription.

Another cross-sectional survey was carried out in the pediatric dental clinic at Ondokuz Mayıs University which concluded that prevalence of self-medication practices for children's dental problems was high during Covid 19 pandemic.⁶

As the world is struggling to contain this viral disease, millions of people are frantically searching for health-related information online.⁷ This has probably caused a rise in parents opting for self-medication for their children.

Although local drug stores were the main source of information for parents who self-medicated their child (25.7%), influence from friends and relatives was also predominant in the current study (17.3%). A study conducted by Geissler PW et.al⁸ in 2000 concluded that the habit self-medication among family members may influence the other members of the family and sometimes they might use the same prescription as it could have led to relief of symptoms in them previously.

Educational qualification and socioeconomic status did not have any statistical significance in the present study as 78.6% of the respondents of the questionnaire were graduate and above and 90.9% belonged to upper class and upper middle class.³ Nevertheless, self-medication practice was found to be prevalent in the studied population as 61.5% of the parents responded positively to it. Contrary to these results, a positive relationship was found between socioeconomic status and self-medication where a significant correlation was found between lower socioeconomic and prevalence of self-medication in the studied sample by A Jamhour et.al in 2016.⁹ Therefore, the reason for insignificant correlation between lower socioeconomic class and self-medication found in the current study could be attributed to the fear of Covid-19 pandemic.

All these studies establish the fact that the deep-seated fear of this pandemic has had a paramount effect on self-medication practice of parents especially for their children, but at the same time it concerns the medical/dental practitioners of misuse of drugs leading to untoward side effects.

CONCLUSION

Though clinic consultation visits are likely to expose people to the virus which can be present on any surface or suspended in the air. It could be transmitted from someone else who is a carrier for the Novel virus. Hence, the chances of becoming infected is higher if one exposes themselves to the outside environment.

Accordingly, the population has begun to self-medicate, especially when it pertains to their children's health as a measure to stay safe and avoid getting exposed to a potentially life-threatening infection.

Medical community has offered many options to improve overall health outcomes, such as awareness campaigns, medical camps and low-cost consultancy in healthcare facilities.

Unfortunately, most of these options do not fulfill the standard operating procedures and criteria required for the current pandemic situation to prohibit exposure to the Coronavirus. Therefore, other options such as TELECONSULTATION¹⁰ via different dental health education applications which are available on the internet to help people maintain good oral health practices at home can be used efficiently until this spread of infection is controlled and we can revert back to our normal post Covid life style as it is a well-established fact that prevention is better than cure.

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Source of Support: Nil; **Conflict of Interest:** None

Submitted: 21-01-2022; **Accepted:** 28-03-2022; **Published:** 30-04-2022