

## Original Research Article

# Evaluation of chief complaints of patients and prevalence of self-medication for dental problems: an institutional study

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## ABSTRACT

**Background:** The importance of oral health in the general wellbeing of our health is still largely undervalued. The current study was designed to comprehend the details of chief complaints and self-medication of the patients visiting a dental hospital in Mumbai. The level of awareness of the patients and its association with the practice of self-medication was also explored in the study.

**Methods:** 300 randomly selected patients reporting to Nair Hospital Dental College were surveyed to conduct this Clinical, Observational, Cross sectional, single center study. A specially designed and validated questionnaire consisting of 14 close ended questions was provided to the patients in the language of their convenience.

**Results:** The most common chief complaint recorded among the dental patients was dental pain. This was followed by swelling, mobility and tooth replacement. The patients reported that most of them had experienced multiple dental problems before and did not report to the dental healthcare provider. 81% of the patients reported that they had practiced some form of self-medication for dental problems. 56.33% of them used analgesics, the pharmacy and over the counter drugs were the most common sources. A number of reasons were reported for the use of these drugs and the most common reason was to get quick or temporary relief but the patients did not report to the health care provider unless the symptoms got severe. Finally a significant relationship was recorded between the level of awareness of patients about the ill effects of self-medication and the prevalence of its practice among dental patients.

**Conclusions:** More attention should be drawn towards the big impact of dental and oral health on the general wellbeing of the patients. The ethical use of medication should be encouraged not only by ensuring stringent rules governing the distribution of drugs but also by educating patients about the numerous risks involved with the practice of self-medication.

**Keywords:** Dental chief complaints, Self-medication

## INTRODUCTION

The 21<sup>st</sup> century saw the invention of innumerable advances in diagnostic sciences and dentistry.<sup>1</sup> These technological advances have definitely helped dental healthcare practitioners to effectively diagnose conditions early and provide comprehensive treatment strategies.<sup>2</sup> But even today, it must be understood that for the dental

health care provider to develop an effective treatment plan, he/she must first accurately identify and diagnose the dental condition or disease.<sup>3</sup>

It has also been known for centuries now that, the primary and a vital part of the process of diagnosis is, taking a detailed case history, one that includes the patient's presenting symptoms, the past medical history,

patient concerns, psychological and social history; the most important part of the case being the patient's chief complaint.<sup>4</sup> Chief complaint may be defined as "the patient's reason for seeking care or attention, expressed in terms as close as possible to those used by the patient or responsible informant".<sup>5</sup> It not only encourages communication between the doctor and patient but also forms the framework around which a clinician builds a diagnosis.<sup>6</sup> Therefore one of the objectives of this study was to evaluate the chief complaints of patients who report to the dental hospital.

Health has been known as the level of functional and metabolic efficiency of a living organism. It was in 1948 that the World Health Organization (WHO) defined health in its broader sense as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity."<sup>7-9</sup> Although today this is the most widely used and accepted definition of health, the importance of dental and oral health in the general wellbeing of the person is not recognized in many parts of the world.<sup>10</sup> It is seen patients often fail to comprehend the importance of oral health. They do not seek treatment for dental illness until considerable time has elapsed and the symptoms have become extremely severe.<sup>11</sup> Difficulty in expressing themselves, distance from the nearest dental health care provider, lack of knowledge, and even lack of motivation of seeking dental treatment form some of the obstacles in seeking necessary oral health care. This leads to the practice of "self-medication" for dental problems which is largely undocumented in the Indian population.<sup>12</sup>

"Self-medication can be defined as obtaining and consuming drugs without the advice of a physician for diagnosis, prescription or surveillance of treatment."<sup>13</sup> The practice of self-medication cannot be considered entirely harmful and has an important role in treating minor illness, resulting in decreased frequency of physician visits, increased patient autonomy, and reduced costs.<sup>14</sup> Besides these, sometimes self-medication may be the only form of treatment available in areas where medical facilities are not accessible.<sup>15,16</sup>

However on the flip side, these medications are after all chemicals, capable of disrupting the finely tuned functioning of the human body if used in an unwarranted manner.<sup>17</sup> Without the supervision of a trained medical professional, these medications could result in missed diagnosis, delays of appropriate effective treatments, adverse drug interactions, increased risk of drug toxicity, under or overdosing etc.<sup>16</sup> Self-medication is reported to be twice as common as the use of prescribed medication in studies carried out around the world.<sup>18</sup> This international rise in the irrational use of medication has raised a lot of public and professional concerns.<sup>19,20</sup> This study was designed to identify the dental chief complaints and report the prevalence of the practice of self-medication done for dental problems in the dental patient population in Mumbai.

## Objective

The objectives of this study were to study the characteristics of the chief complaints of patients reporting to a dental healthcare institution in Mumbai; to study the prevalence of "self-medication" for dental diseases in the population of Mumbai; to identify the most commonly used medications without prescriptions for dental diseases; to comprehend the reason for self-medication and to identify the source of obtaining these medications in these cases; to identify the level of knowledge and awareness of the patients about the effects and side-effects of self-medication and to educate them about the same; to stimulate the ethical use of medications among dental patients.

## METHODS

### Sampling and sample size

A randomized sampling technique was utilized for the study. Very few studies were identified where self-medication related to dental problems and diseases was explored in an Indian patient population. The latest study carried out in the general population of Mumbai was carried out by Saharan et al in 2015.<sup>21</sup> This was utilized to calculate the sample size for the current study using the formula:

$$\text{Sample size} = Z^2 p(1-p)/c^2$$

Where:

Z=Z value (number of standard deviations an observation is away from the mean, e.g. 1.96 for 95% confidence level),

p= percentage, expressed as decimal and

c=confidence interval, expressed as decimal (e.g., 0.05 =  $\pm 5$ ).

Confidence level of 95%, confidence interval of 5 and percentage population of 85% were considered to determine sample size for the survey.

$$\begin{aligned}\text{Sample size} &= (1.96)^2 \times 0.85(1-0.85)/(0.05)^2 \\ &= 195.9216\end{aligned}$$

Thus the minimum sample size according to the calculations was 196.

Hence sample size of 300 was determined for the present study.

### Study design

300 randomly selected patients reporting to Nair Hospital Dental College, Mumbai were surveyed from June 2017 to October 2017 to conduct this clinical, observational, cross sectional, single center study. The Inclusion criteria

were: Adult patients in age group 25-70 years. All patients who could not provide legal informed consent were excluded from the study. The patients were provided with a specially designed, validated, self-administered questionnaire which had 14 close ended questions divided into 3 sections in a language of their convenience. Section 1 included the patient's personal and demographic information, section 2 included the details of the chief complaints and section 3 included the details of self-medication and the level of awareness about its effects and side-effects. The questionnaire was designed in English and was later translated to 2 local languages: Hindi and Marathi. A written informed consent was obtained from all patients in the language of their convenience and an approval was obtained from the institutional ethical committee prior to the start of the study.

### Statistical analysis

The data that was collected was analyzed with GraphPad Prisma software. Fisher's test of significance was used to identify the statistically significance between self-medication and knowledge of it's the ill effects (Fisher's test,  $p < 0.0001$ ).

## RESULTS

Of the 300 Patients who participated in the survey, 135 were males and 165 were females. The mean age of the patients was found to be 36.22 years (Figure 1).

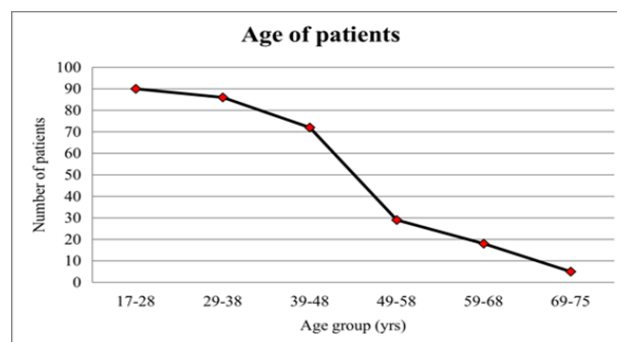


Figure 1: Line diagram representing age of patients.

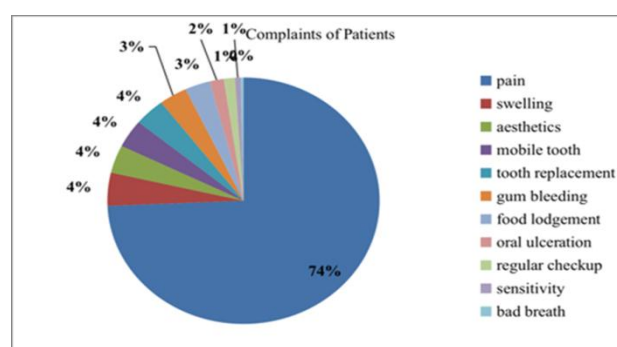


Figure 2: Chief complaints of patients.

The statistics of the chief complaints reported by the patients is represented in Table 1.

Table 1: Statistics of chief complaint of patients.

Complaint	Males		Females		Total	
	Number	%	Number	%	Number	%
<b>Pain</b>	98	72	125	76	223	74
<b>Swelling</b>	8	6	5	3	13	4
<b>Aesthetics</b>	3	2	8	5	11	4
<b>Mobile tooth</b>	6	4	5	3	11	4
<b>Tooth replacement</b>	6	4	5	3	11	4
<b>Gum bleeding</b>	4	3	6	4	10	3
<b>Food lodgement</b>	5	4	4	2	9	3
<b>Oral ulceration</b>	2	1	3	2	5	2
<b>Regular check-up</b>	2	1	2	1	4	1
<b>Sensitivity</b>	1	1	1	1	2	1
<b>Bad Breath</b>	1	1	0	0	1	0
<b>Total</b>	136	100	164	100	300	100

Majority ( $n=151$ ; 50.33%) of the patients reported that the nearest dental healthcare provider was within 1-2 kms of their residence and only 0.56% [ $n=17$ ] reported that the nearest dental healthcare clinic was farther than 5 kms. Figure 2 shows a graphic representation of the chief complaints of the patients.

Majority of the patients [ $n=103$ ; 34.33%] stated that they reported to the dental hospital within 7 days of suffering from a dental problem. 23.67% [ $n=71$ ] patients stated that

they reported within 15 days, 22% [ $n=66$ ] stated that they reported within a month while 20% [ $n=60$ ] stated they suffered from the condition for 6 months or more before reporting to a dental hospital.

The details of the practice of self-medication among the patients are reported in Table 2.

The patients also reported the complaints which affected their oral and dental health but they did not report to the

healthcare provider for them, this data is represented in Figure 4.

Of the 300 patients, 19% [n=57] patients reported that they had not practiced any self-medication for their dental/ oral issues before reporting to the dental hospital while 81% [n=243] reported that they had practiced some form of self-medication before reporting to the hospital (Figure 5).

Further details about the type, duration, source, cause and effect of self-medication are reported in Table 2.

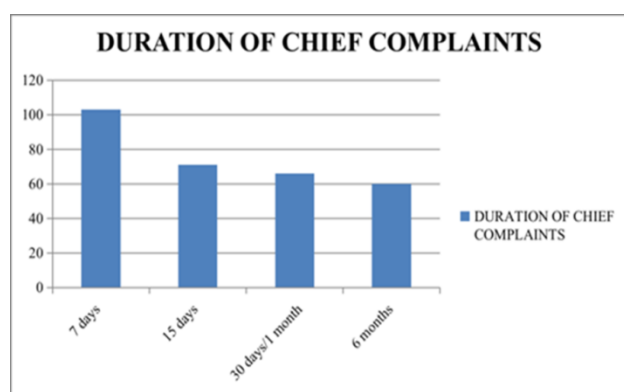
Results of the question about the knowledge and the ill effects of self-medication among the patients who practiced self-medication and those who don't are represented in Table 3. The association between self-medication and knowledge of it's the ill effects was found to be statistically significant (Fisher's test,  $p < 0.0001$ ).

**Table 2: Details of self-medication.**

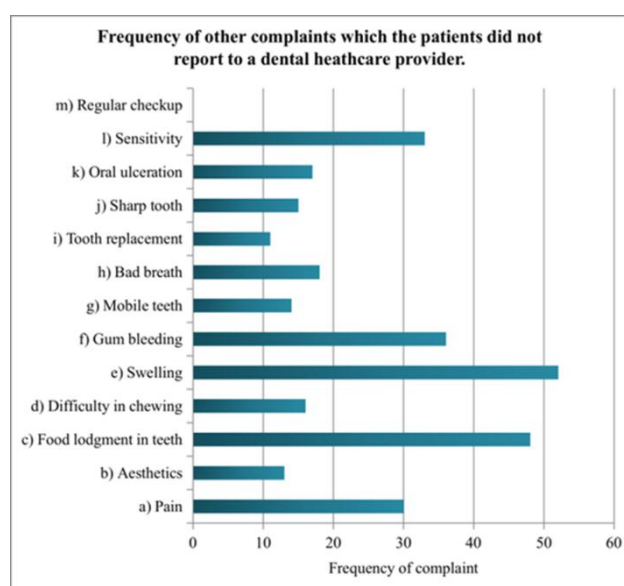
	Number	%
<b>Type of self medication</b>		
Analgesics	137	56.33
Antibiotics	32	13.16
Home remedies/Herbal medication	66	27.16
Topical medication	8	3.29
Total	243	100
<b>Duration</b>		
3 days	167	68.72
7 days	56	23.05
15 days	20	8.2
Total	243	100
<b>Source of medication</b>		
Over the counter medication	83	34.16
Pharmacist	44	18.10
Past medication/left over medication	25	10.29
Friend/family suggestion	74	30.46
Other's prescriptions	11	4.53
Online	6	2.26
Total	243	100
<b>Causes of self medication</b>		
Quick relief/Temporary relief	99	40.74
Past episodes /experience of treating the symptom with same medications	52	21.39
Lack of time	34	13.99
Lack of money	7	2.89
Distance from nearest healthcare center too large	17	7
Lack of motivation for treatment	33	13.58
Others	1	0.41
Total	243	100
<b>Effect of self-medication</b>		
Temporary relief	153	62.96
Curative effect	7	2.89
Not effective	62	25.51
Side effects	20	8.23
Total	243	100

**Table 3: Association between knowledge of ill effects and the practice of self-medication.**

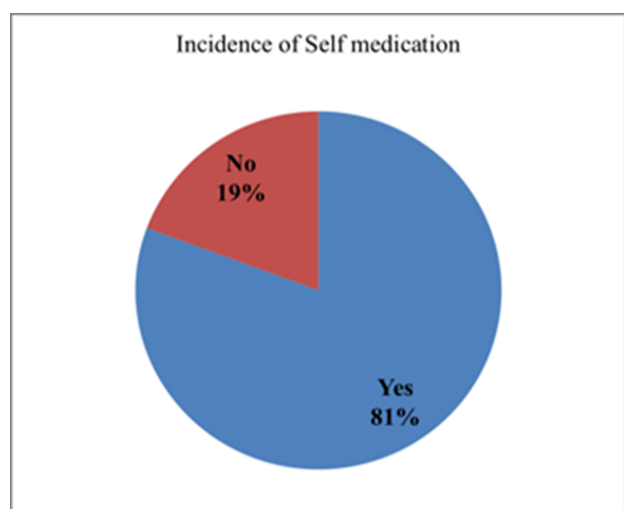
Self-medication	Knowledge of ill effects		Total
	Yes	No	
Yes	86	157	243
No	38	19	57
Total	124	176	300



**Figure 3: Duration of chief complaints of patients reporting to the dental hospital.**



**Figure 4: Dental and oral problems which the patients suffered from but did not report to a dental healthcare provider.**



**Figure 5: Incidence of self-medication among patients reporting to the dental hospital.**

## DISCUSSION

The results of our study indicated that although patients from all age group reported with dental problems to the hospital, the most common age group was 20-50 years, and the mean age was found to be 36.22 yrs. This is found to be consistent with other studies carried out worldwide.<sup>22-25</sup> This finding can be explained as this age group tends to be more concerned about esthetics and also is well informed about dental problems from the internet etc. However this was also found to be the age group that practiced self-medication the most, which was also consistent with other studies and can be attributed to the busy work life, lack of time, money, excessive stress and workload etc.<sup>26-28</sup>

Since Mumbai is an urban area, as expected majority [50.33%] stated that the nearest dental health care provider whether a private practitioner or a public dental healthcare center, was within 2 kms of their residence. Surprisingly even today the most common chief complaint found was pain [74%]. This finding was also consistent with earlier studies.<sup>22,24,29</sup> Swelling, Aesthetics, Sensitivity and gum bleeding were other common chief complaints while only 1% of the population reported to the dental healthcare center for Regular dental checkups. Sadly even today in developing countries like India it is 'pain driven' dentistry and not preventive dentistry. Furthermore over 20% of the patients stated that, they had suffered from the dental problem for over 6 months before reporting to a dental hospital which suggests the lack of knowledge about dental diseases and their implications on general health of an individual.

A unique question to this study was that the participants were asked if they had previously suffered from any dental problem for which they did not seek help from a professional. The most common complain found here was swelling. This was closely followed by food lodgment, gum bleeding and sensitivity. All these symptoms if reported on time could have prevented the progression of the dental disease to severe pain for which maximum number of patients reported to a hospital.

Self-medication is defined as obtaining and consuming drugs without the advice of a physician either for diagnosis, prescription or surveillance of treatment.<sup>30</sup> The practice of self-medication has become of increasing concern as the number of diseases & drugs available are increasing and the numbers of drug interactions have become more common, more dangerous and sometimes even fatal. A number of studies worldwide have shown how this practice is extremely common among medics and medical students all over the world.<sup>13,31-33</sup> In the current study, the prevalence of self-medication among patients was found to be 81%, which was considerably higher than 67.8% recorded by Agbor et al in Cameroon, 37.3% reported by Souaga at Ivory Coast, 42.0% recorded by Afolabi in Nigeria and 48% documented by Varenne, in Burkina Faso.<sup>34-37</sup> This value was however



much lesser than the one recorded by Komalraj et al in Bangalore which was 100%.<sup>14</sup>

The most common type of medication used was analgesics which is consistent with the results of a number of studies.<sup>33</sup> Although not a lot of studies concentrate on the problem of self-medication in dental patients, Adedapo et al in their study reported that analgesics for dental problems were one of the common reasons for self-medication along with general health problems.<sup>38</sup> The second most commonly used drug type in our study was herbal medications and home-remedies [26.16%]. This was also in accordance to other studies carried out in developing countries.<sup>39,40</sup> A number of cultural factors play an important role in regard to the use of herbs and herbal medications. Age-old home remedies have been passed down the generations on one side while on the other, a number of patients even after accepting and acknowledging the power of modern allopathic medicines, chose herbal medication for relief from dental and medical problems.<sup>39,40</sup> The study also recorded that 13.16% patients had consumed antibiotics without prescriptions. It is not only illegal to provide such medication to patients without prescriptions but this can prove to be extremely dangerous and result in various side effects ranging from gastric abnormalities to severe drug allergies, and the most dangerous of them being antimicrobial drug resistance.<sup>41</sup>

In the current study, 68.72% (n=167) patients reported that they consumed self-medication only for 3 days and reported to the clinician when the medications did not help. Similar findings were recorded by Ritu et al in 2011 and Komalraj et al in 2015.<sup>14,26</sup> However, 8.2% patients accepted that they resorted to self-medication for over a fortnight before reporting to a dental healthcare center. The most common source of obtaining drugs was from the pharmacy and most patients reported the use of over the counter drugs (34.16%). Although safe in most occasions, these drugs may provide only temporary relief from symptoms while the underlying cause is left untreated. Secondly, prolonged use of these drugs may have a number of side-effects.<sup>42</sup> The second most common source of drug was from friends or family's suggestions, over 10% used other's leftover drugs and almost 5% used other's prescription for obtaining medicines. All of these practices can be extremely dangerous for the patient. It is not advised to take leftover medications as on one side their effectiveness is in question as they may be expired while on the other hand a complete dose may not be left which can not only cause delays in treatment but also result in grave consequences like drug resistance. Besides these, using someone else's prescription has the potential of causing dangerous drug interaction and allergies in patients.<sup>16,43</sup> Earlier in 2000 also, Geissler had reported in his study that patients who practice self-medication can largely influence their family members to use self-medication or even use their own prescriptions for relief from their symptoms.<sup>39</sup> Another unique aspect of this study was that 2.26% patients

reported of obtaining drugs from online sources. This brings to light the dangers of online sales of drugs without prescriptions which weren't explored in earlier studies.

Majority of the patients, [40.74%] reported that they resorted to self-medication for quick or temporary relief, but once the symptoms reduced, they did not visit a healthcare center till the symptoms reoccurred. This is commonly the situation in an infected tooth where recurrent episodes of dentoalveolar abscess are common unless the tooth is treated appropriately. In accordance 62.96% patients also reported that the medications only provided temporary relief and not complete respite from the illness. Similar results have been reported in a number of earlier studies.<sup>13,14,36,44</sup> Although lack of time and lack of money were other common reasons for avoiding visiting a dental clinic, it was sad to see that 13.58% patients did not feel dental treatment was important and lacked motivation to accept any dental treatment. The last few questions of the current study focused on the effects of the self-medications as experienced by the patients and their level of knowledge about the ill effects and side effects of self-medications. As discussed earlier, majority of the patients reported that the medications they took only provided them temporary relief, followed by 25.51% who reported that the medications were not effective. Only 2.89% reported curative effect while 8.23% reported side effects which covered minor gastric irritations, gastric ulcers and even severe drug interactions. Finally from the results documented from the last question in the questionnaire, the Fisher's test identified a significant association between the knowledge/ level of awareness of the patients about the various side effects of self-medication and the practice itself. This proves that even today most of the patients who practiced self-medication were unaware of its implications on health and those who were informed were more likely to avoid this practice. Taking these results into consideration, more efforts should be directed towards educating patients and the general public about the repercussions of avoiding professional oral healthcare and consuming any medications without the supervision of a professional.

## CONCLUSION

The most common chief complaint recorded in the study was dental pain followed by swelling. The study also recorded a large number of patients who did not seek treatment for their oral and dental problems but resorted to self-medications instead. The study affirms that the prevalence of self-medication for dental illness is high in Mumbai. The results clearly portray how self-medication for dental practice is a dangerous yet largely undocumented practice in India. The level of awareness of the patients about the ill effects of self-medication was considerably low and had a significant association with the prevalence of the practice itself. Though self-medication cannot be completely branded as evil,

numerous threats are involved in this practice. It is time that we emphasize on educating patients about the importance of oral health and the numerous implication it can have on the general health and well-being. Along with this the importance of consulting a dental healthcare professional and following the treatment plan/medications meticulously must be stressed. The ethical use of medication does not rely entirely on the government and regulatory bodies, but also on health care providers in creating an educated and informed patient population.

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