

## SELF MEDICATION PRACTICES FOR ORAL HEALTH PROBLEMS AMONG DENTAL PATIENTS IN BANGALORE: A CROSS SECTIONAL STUDY

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### **ABSTRACT**

**Introduction:** Self-medication is commonly practiced all over the world. Self-medication is defined as the use of medication by a patient on his own initiative or on the advice of a pharmacist or a lay person instead of consulting a medical practitioner. The present study was aimed to estimate the prevalence of self-medication for oral health problems among dental patients in Bengaluru city; to identify triggering factors that could influence self-medication practices; to identify sources of medications used; to identify sources of information about medications used; and to identify reasons for self-medication. **Study Design:** A Cross sectional Study. **Methods:** A survey was conducted among 175 subjects among dental patients in Bengaluru city. Data were collected through a specially designed proforma using a closed-ended, self-administered questionnaire containing 15 questions, in five sections.

**Results:** The prevalence of self-medication was 100% among dental patients. Study showed, 60% of the respondents houses from nearest health care centre/clinic/medical store was >2kms. Among reasons of self-medication, minor illness (36.6%) was the most common, with Toothache (52.6%) as the main triggering factor for self medication. Analgesics (48%), Native herb (29.7%) were often used for treating their oral health problems. Majority of the subjects consulted pharmacist (40.6%) for basic treatment and they only approach dentist (84.6%) if the problem persisted. Majority of self-medication users for oral health problems had knowledge of checking expiry date of medications while self-medication. **Conclusions:** High prevalence of self-medication in our study is a major concern. Analgesics, herbal remedies were often used for treating their oral health problems. The study suggested that there is a necessity for educational programs emphasizing on the risks associated with indiscriminate drug usage in which health care providers, pharmacists and others, including parents, should be actively involved in health education that will help in inculcating the practice of responsible use of drugs amongst the general population.

**Keywords:** Self medication, oral health problem, toothache

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### I. INTRODUCTION

Self-medication is defined as the use of medication by a patient on his own initiative or on the advice of a pharmacist or a lay person instead of consulting a medical practitioner. Self-care can be defined as the primary public health resource in the health care system. It includes self-medication, non-drug self-treatment, social support in illness, and first aid in everyday life. It has become widely accepted that self-medication has an important place in the health care system. Improvements in people's general knowledge, level of education and socioeconomic status in many countries form a reasonable basis for successful self-medication. Regulatory assessment of a change from prescription to non-prescription status should be based on medical and scientific data on safety and efficacy of the compound and rationality in terms of public health <sup>[1]</sup>.

Self-medication is commonly practiced all over the world. <sup>[2-4]</sup> Benefits of self medications include decreased potential frequency of physician visits, increased patient autonomy and reduced costs. However, these alternative medical practices lack clinical evaluation of the condition by a trained medical professional, which could result in missed diagnosis, delays of appropriate effective treatments, adverse drug interactions and increased risk of drug toxicity as result of under or overdosing. <sup>[5]</sup> The importance of self-medication as a phenomenon has attracted the interest of health professionals including physicians and policy-makers, especially when drugs become deregulated and change from prescription status to be sold over-the-counter (OTC). Generally, it is accepted that self-medication has an important role in the care of minor illness <sup>[6,7]</sup>.

In the dental profession, apart from anxiety due to a phobia for dentists and their practice, toothache is the most likely symptom that may warrant patients to embark on self- medication.<sup>[5,8-10]</sup> Consequently, there is increasing evidence that self- medication practices among dental patients with history of toothache are common in many developing countries and despite its adverse clinical impact on the dentition.

This study was aimed to estimate the prevalence of self-medication for oral health problems among dental patients in Bangalore city; to identify triggering factors that could influence self-medication practices; to identify sources of medications used; to identify sources of information about medications used; and to identify reasons for self-medication.

## II. METHODOLOGY

**Study design:** A Cross-Sectional Survey design. **Duration for the study:** The study duration was approximately 3 months.

**Ethical clearance:** The study synopsis of the survey was prepared and submitted to the Institutional Review Board (IRB), Rajarajeswari Dental College and Hospital, Bengaluru for Ethical Approval. After the review by the IRB board members, approval was granted to conduct the survey.

**Informed consent:** The study participants were selected according to the eligibility criteria and included in the survey only after obtaining a written informed consent from them. The study purpose objectives were explained to the subjects before obtaining their consent. A copy of consent form is herewith enclosed.

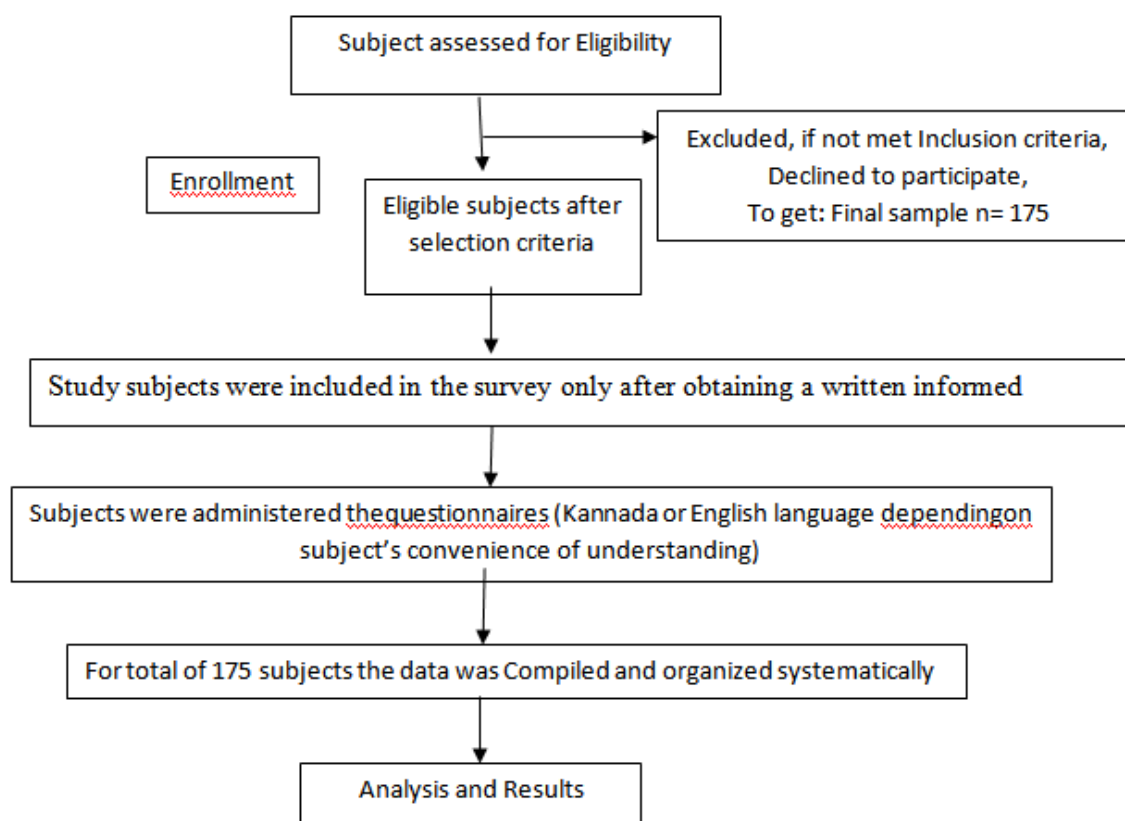
**Eligibility criteria-Inclusion criteria:** Subjects who were 18 years and above, subjects visiting outpatient department of Rajarajeswari Dental College and Hospital, Bengaluru. **Exclusion criteria:** Subjects who are illiterate, Subjects who were mentally incapacitated to give a valid response to questions, subjects not willing to participate.

**Description of questionnaire:** Data were collected using a specially designed proforma (or questionnaire). It was a closed- ended, self- administered questionnaire containing 15 questions, under five sections. First section of the questionnaire contained information related to demographic details of the survey participants. Second section of the questionnaire which were related to distance of the respondent's houses from the nearest health care centre/clinic/medical store. Third section of the questionnaire contained three questions which were related to the knowledge about self-medication related to oral health problems. Fourth section of the questionnaire contained three questions which were related to Triggering factors, reasons for self-medication and response of the population after the self- medication in relation to oral health problems and fifth section of the contained four questions which were related to Types of self-medication, Source of buying, Consultation made for self-medication and Measures taken if problem persists.

**Validation of translated questionnaire:** The survey proforma was prepared in English was translated to Kannada language (local language) and retranslated to English in order to check the validity of the translation by translation experts (back translation method).

**Survey procedure and administration of questionnaire:** A questionnaire based survey was conducted on 175 subjects aged 18 years and above of either sex to assess the prevalence of self-medication practice for oral health problems among dental patients (subjects) visiting outpatient department of Rajarajeswari Dental College and Hospital, Bengaluru, Karnataka, India. The investigator introduced himself to the survey subjects in the local language (Kannada) or English depending on the convenience of the study subjects and subjects who consented to participate were enrolled into the survey as per eligibility criteria in adherence to protocol. Confidentiality of the data and anonymity of participation was ensured to all respondents of the study who had the right to withdraw at any stage of data collection. Subjects were interviewed on the basis of pre-structured questionnaire highlighting age, gender and educational qualification, practice of self-medication, source of self-medication, source of information about medication and reasons for resorting to self-medication and then on administered the questionnaires (Kannada or English language depending on subject's convenience of understanding). ). The subjects were then instructed to answer the questions in the questionnaire. They were informed to feel free and raise any questions to clarify their doubts. On average, it took 10-15 minutes for subjects to answer all the questions in the questionnaire. The answered questionnaires were received from the subjects after they finished answering on the same day.

### III. SCHEMATIC REPRESENTATION OF SURVEY DESIGN



#### SAMPLE SIZE DETERMINATION

Based on published literature of Self Medication and Non-Doctor prescription was 96.46% (conducted by Darshana Bennadi, 2014).<sup>[12]</sup> The prevalence of self-medication in that survey was found to be 96.46%. With relative precision of 10% and 5% level of significance and 90% of power. The required sample size was 160, assuming 10% non-response rate the final sample size required is 175.

Sample size was calculated using the formula:

$$n = \frac{Z^2 (1-\alpha/2) (1-P)}{d^2 \alpha P}$$

Where,

$n$  = number of subjects required

$Z(1-\alpha/2) = 1.96$

$P = 70.9\%$  (prevalence of self-medication) = 0.71

$(1-P) = (1-0.71) = 0.29$

$d$  = relative precision = 10% = 0.1

$n = 160$  subjects; nonresponse rate of 10% was expected; therefore final sample size was calculated to be 175 subjects.

### IV. RESULTS

An cross sectional study was conducted to assess the prevalence of self-medication practice for oral health problems among dental patients (subjects) visiting outpatient department of Rajarajeswari Dental College and Hospital, Bengaluru city; to identify triggering factors that could influence self-medication practices; to identify sources of medications used; to identify sources of information about medications used; and to identify reasons for self-medication.

The present survey had response rate of 100%. A total of 175 subjects agreed to participate in the study. Out of which 108 (61.7%) were males and 67 (38.3%) were females. The age of the respondents ranged between 18 and 66 years, with a mean age of  $36.8 \pm 12.766$  years.

On the distribution of participants based on educational qualification 77 (44%) participants were PUC (Pre university college), 35.4% were graduates, the rest were 24 (13.7%) SSLC and 12 (6.9%) below SSLC. The demographic details of the survey are presented as shown in

**Table 1: Demographic details of the population**

Age	Years	Mean	N	Mean	SD	Median	Min.	Maxi.
Minimum	18 years	36.8	175	36.8	12.766	37.00	18	66
Maximum	66 years							

Gender	n	Percentage
Male	108	61.7
Female	67	38.3
Total	175	100.0

Martial Status	n	Percentage
Single	53	30.3
Married	122	69.7
Total	175	100.0

Education Status	n	Percentage
Below SSLC	12	6.9
SSLC	24	13.7
PUC	77	44.0
Graduate	62	35.4
Total	175	100.0

Majority of subjects houses distance was more than 2kms 105 (60%) from the nearest health care centre/clinic/medical store [Table 2].

**Table 2: Distance from nearest health post/medical store**

Distance	n	Percentage
<1 km	25	14.3
1-2 km	45	25.7
>2 km	105	60.0
Total	175	100.0

About 100% of the population had practice of the self- medication for oral problems and majority had used same prescription as their family [Table 3]. Majority of subjects who practiced self- medication used it for few days 106 (60.6%) till oral health problem subsided

**Table 3: Practice of self-medication for oral health related problems among study population**

Self-medication practice		
	n	Percentage
Yes	175	100.0
Same prescription as family members		
Yes	117	66.9
No	58	33.1
Total	175	100.0
Duration of self-medication usage		
Few Days	106	60.6
Few Weeks	17	9.7
Till condition subsides	52	29.7
Total	175	100.0

Majority of subjects opined toothache 92 (52.6%) as major triggering factor and Minor illness 64 (36.6%) as major reason for practicing self-medication for oral health problems [Tables 4]. Subjects who practiced self-medication used analgesics 84 (48%) as the main mode [Table 5] and had temporary relief of pain 79 (45.1%) [Tables 4]. The most common source was the pharmacy shop 147 (84%) [Table 5]. Majority of subjects practicing self-medication opined that they would consult pharmacists 71 (40.6%) for self-medication [Table 5] and opined that they would visit the dentist 148 (84.6%) when oral problems persisted even after self-medication [Table 5]. Majority of self-medication users for oral health problems had knowledge of checking expiry date of medications while self-medication.

**Table 4: Triggering factors, reasons for self-medication and response of the population after the self-medication**

<b>Triggering factors</b>		
	<b>n</b>	<b>Percentage</b>
Toothache	92	52.6
Gum Bleeding	11	6.3
Bad breath	5	2.9
Oro-facial swelling	6	3.4
Tooth mobility	16	9.1
Others	45	25.7
<b>Total</b>	<b>175</b>	<b>100.0</b>
<b>Reason for self-medication</b>		
Lack of time	42	24.0
Lack of money	11	6.3
Previous experience of treating a similar illness	30	17.1
Minor illness	64	36.6
Traditional/religious belief	9	5.1
Unavailability of doctors	11	6.3
Others	8	4.6
<b>Total</b>	<b>175</b>	<b>100.0</b>
<b>Feel after self-medication</b>		
Temporary pain relief	79	45.1
Effective	32	18.3
Useful in stressful condition	19	10.9
Unsure about effects	6	3.4
Curative in nature	29	16.6
Cheaper options	10	5.7
<b>Total</b>	<b>175</b>	<b>100.0</b>

**Table 5: Types of self-medication, Source of buying, Consultation made for self-medication and Measures taken if problem persists**

<b>Type of self-medication used</b>		
	<b>n</b>	<b>Percentage</b>
Analgesics	84	48.0
Native herb	52	29.7
Antibiotics	12	6.9
Salt and hot water	14	8.0
Ice pack	6	3.4
Others	7	4.0
<b>Total</b>	<b>175</b>	<b>100.0</b>
<b>Buying of self-medication</b>		
Pharmacy shop	147	84.0
Hospital pharmacy	12	6.9
Traditional home	7	4.0
Others	9	5.1
<b>Total</b>	<b>175</b>	<b>100.0</b>
<b>Advice for self-medication</b>		
Relatives	41	23.4
Friends	23	13.1
Personal knowledge	19	10.9
Pharmacist	71	40.6
Mass media	9	5.1
Traditional healers	7	4.0
Others	5	2.9
<b>Total</b>	<b>175</b>	<b>100.0</b>
<b>Measures if problem persists</b>		
Visit a dentist	148	84.6
Visit a medical practitioner	16	9.1
Continue same medication	11	6.3
<b>Total</b>	<b>175</b>	<b>100.0</b>

## V. DISCUSSION

Self medication can be defined as obtaining and consuming drugs without the advice of a physician or pharmacist either for diagnosis, prescription or surveillance of treatment. Self treatment include patient satisfaction with the health care provider, cost of the drugs, educational level, socioeconomic factors, age and gender. In the last 10 years many medicines that were originally 'prescription only' have now become available prescription either from pharmacies or other general retail outlets. The present survey was carried out to find the prevalence of self- medication practice to be very high (100% of total study participants). The reasons for such high prevalence of such a practice among dental patients according to authors by seeing the results of present survey may be due to Distance from nearest health post/medical store, minor illness, lack of time, quick relief from symptoms, no family support, lack of knowledge about side effects, and belief in other herbal system of medicines. This result is in line with the results obtained in other studies conducted by many authors globally where the wide range of self-medication practices from between 15% to 75% in relation to general health problems where dental problem was part.<sup>[22-25]</sup>

The age group of the study population in the survey ranged from 18 to 65 years, and mean age group of the participants was 38.8 years indicating that the majority of the study participants were middle- aged and had practice of self- medication. This finding is in accordance with the study conducted by Shankar *et al.*<sup>[26]</sup> in 2002, Ritu *et al.*<sup>[27]</sup> in 2011 and Sweileh where it was found that middle- aged participants had practice of self- medication when compared to extreme age groups (children or old age individuals). The reason for such trend is due to the fact this age group in the population are the one who are at more stress and workload and also at the same time the working population in the society.<sup>[26-28]</sup> This is the age group which is more susceptible to many health problems including oral health problems and tries to adopt self- medication practices due to various factors like lack of money, time, minor illness, Previous experience of treating a similar illness, and unavailability of doctors.

Our study showed that, the self-medication practice was more among male participants than the female participants, especially in middle aged people. Shankar *et al.*<sup>[26]</sup> in 2002, Ritu *et al.*<sup>[27]</sup> in 2011 and Sweileh.<sup>[28]</sup> in 2008 was in accordance with our study results. However, there are a study conducted by Afolabi AO <sup>[29]</sup> in 2008 which showed contrary results where female participants were more involved in self- medication compared to male participants. The main reasons were the fact that in those studies hospital facilities were out of reach especially for female housewives, presence of more health consciousness, due to the low threshold of pain and more fear of dental procedures.

In our current survey that majority of participants used the same prescription of their family members. Geissler PW *et al.*<sup>[32]</sup> in 2000 reported that the use of self- medication among family members influence the other members and sometimes also recommend the other family members to use the same prescription used by them as the prescription could have led to relief of symptoms in them.

In our survey used self- medication to cure their symptoms for few days. Ritu *et al.*<sup>[27]</sup> in 2011, where it was found that majority of the participants also consumed self- medication for few days, and there was some relief of symptoms for which self- medication was consumed.

The present survey showed that participants who practiced self- medication, toothache was the main reason as the triggering factors for administration of self- medication. As there were not much studies which have been done till date to assess the practice of self- medication in relation to oral problems. Sweileh MW <sup>[28]</sup>, Adedapo HA *et al.*<sup>[30]</sup> reported that dental problem was considered as one of the reason for self- medication along with general health problems.

In our survey, one of the main reason for taking self-medication among the study population minor illness in relation to oral health problems followed by other reasons such as lack of time, previous experience of treating a similar illness, lack of money, unavailability of doctors and traditional/religious belief and others. In this survey the majority of the participants consider dental problems as minor ailments and self- treatable. Agbor MA *et al.*<sup>[31]</sup> in 2011 reported that due to less awareness to dental health among the population, who consider the treatment from oral professionals only when all the remedies have failed to cure or treat the oral disease.

Wijesingha PR *et al.*<sup>[33]</sup> in 2012, Afolabi AO <sup>[29]</sup> in 2009 and Badiger S *et al.*<sup>[34]</sup> in 2012 reported that majority of the participants felt that self- medication gave temporary relief from symptoms like pain, made them independent to take care of themselves and also felt self- medication cured their ailments, this result was in accordance with our current survey also.

Analgesic was used as a common self-medication among majority of the study population in our study. Shankar *et al.*<sup>[26]</sup> in 2002, Ritu *et al.*<sup>[27]</sup> in 2011, Sweileh.<sup>[28]</sup> in 2008, Shveta S *et al.*<sup>[35]</sup> in 2011 reported that use of analgesics was found to be the most common form of self- medication used and which was in accordance with our study results.

In our present study self- medication was procured from pharmacy shop, followed by other places such as hospital pharmacy and others. In previously noticed reasons for self-medication were like lack of time, minor illness, lack of money and parental influence and was ease of approach to pharmacists for their required medication without prescription favored contacting pharmacists at first place for self- medications. The present study results was in corresponded with other studies also like Shveta S et al <sup>[35]</sup> in 2011, Wijesinghea PR et al <sup>[33]</sup> in 2012, Shankar *et al.* <sup>[26]</sup> in 2002, Rituet *al.* <sup>[27]</sup> in 2011, Afolabi AO <sup>[29]</sup> in 2009 , Sontakke S*Det al.* <sup>[17]</sup> in 2011 and Phalke VD et al. <sup>[26]</sup> in 2002. Pharmacists were the main consultants for taking self- medications followed by relatives and friends in our present study. Pharmacist play a key role in giving advice to consumers on the proper and safe use of medicinal products intended for self medication. Majority of study participants practicing self- medication also had a practice of reading the labels which included expiry date when they purchased self- medication. To reduce the risk of potential adverse effects from analgesic drug, the improvement in labels of drug and better education or counselling for patient is required. Improved labelling of analgesics may help consumers to distinguish common analgesics ingredients in a wide variety of preparations and facilitate informed discussions concerning the use of drugs. Though, self medication is promoted by WHO, because of affordability and inaccessibility of health services in developing world, benefit must be weighed against adverse effects.

## VI. CONCLUSION

High prevalence of self-medication in our study is a cause of concern. The worldwide self-medication is increasing day by day which is increasing the complexities in the medical treatments. This survey was conducted to review the self- medication and non-doctor prescription for oral health problems among dental patients (subjects) visiting outpatient department of Rajarajeswari Dental College and Hospital, Bengaluru city.

In this study among the reasons of self- medication, toothache was the most common one. The people of all socio-demographic categories approve of self- medication giving reasons of minor illness as a major reason. In addition to analgesics, herbal remedies were often used for treating their oral health problems. Most of the respondents consulted pharmacist for basic treatment and only decided to approach a dentist if the problem persisted. The study suggested that there is a necessity for educational programs emphasizing on the risks associated with indiscriminate drug usage in which health care providers, pharmacists and others, including parents, should be actively involved in health education that will help in inculcating the practice of responsible use of drugs amongst the general population. The study also showed that there is a need for strict law enforcement to limit the purchase of drugs without a prescription.

The self-medication and resistance of pathogens are directly proportional, i.e. as the level of self-medication increases, obviously the resistant organisms also increase. The effective steps should be taken to reduce self-medication and also to avoid or minimize the dangers of it:

**Firstly** the people should be educated about the dangers of indiscriminate use of drugs.

**Secondly**, the physician should be more judicious in prescribing, and must insist on drugs being supplied by the chemist only on a valid prescription.

**Thirdly**, a proper statutory drug control must be implemented, rationally restricting the availability of drugs to the public. These, three measures would definitely reduce the incidence of drug-related mishaps and help in maintaining good health of the individual and society.

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