

Assessment of Abuse of Self-medication for Oral and Dental Problems amongst 21-60 Years Aged Populace Residing in the Rural Areas of Belgaum Taluk, Karnataka, India: A Questionnaire Study

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Abstract

Background: The practice of self-medication has been recognized since ages. There has been enough literature available regarding it being there for medical illnesses, however, there is dearth of information about it for dental causes. Hence, this study was designed to determine the abuse of self-medication for dental illnesses and the reasons for resorting to it.

Methods: This study was conducted in 10 taluks of Belgaum district. 230 consenting respondents were selected by random sampling from 10 villages and interviewed with the aid of 18-point, closed-ended question based, semi-structured questionnaire.

Results: 63.59% of the respondents admitted to self-medication. Odontalgia was the most common reason for which people resorted to self-medication (57.69%). 70% of the respondents did not have the knowledge about the dose, duration, side effects and interactions of drugs they had used. Paracetamol was the most commonly used drug for self-medication.

Conclusion: Analgesics were the most common drugs abused for self-medication. Adequate health education of the populace was found mandatory to make people aware of the use and misuse of drugs, especially analgesics, and regarding the potential adverse effects they can show, especially when used repeatedly or, on a chronic basis. Also, dental health care services were supposed to be made readily available and affordable so that self-medication amongst rural patients could be reduced to the barest minimum.

Keywords: Self-medication, Dental illnesses, Rural population

Introduction

Health seeking behaviour is a typical response seen in individuals in the presence of illnesses, especially when pain is the attending feature. This response for optimal wellness and recovery is usually a function of individual, societal and environmental factors.¹ Self-medication is an age old practice. Urge of self-care, feeling of sympathy towards family members and individuals known, in sickness, lack of adequate infrastructure for optimal health care services, poverty, ignorance, misbeliefs, extensive information available from various sources regarding drugs with intentional portray of their being effective in specific illnesses in the media as marketing strategies without highlighting their adverse effects and their easy accessibility are the main factors

responsible for the ever rising trend of self-medication.² In developing countries like India, easy availability of a wide range of drugs coupled with inadequate health services results in increased proportions of drugs being abused as self-medication.³ Self-medication is the treatment of common illnesses with drugs which are approved as being safe and effective for use without medical supervision. Drugs for self-medication are popularly called as non-prescription or "over the counter" (OTC) drugs. Indeed, the role of self-medication cannot be completely denied in the existing healthcare scenario where the doctor-population ratio according to the WHO guidelines is still too less, however, it has been commonly observed that drugs normally used as self-medication are most commonly abused and lead to associated adverse effects on repeated and long term unintentional usage to cure an illness symptomatically. The easy accessibility to the commonly abused drugs, furthers, adds to this problem, more so, in the developing countries and especially, in the rural backdrop where the market freely supplies even prescription medicines, supposed to be taken under strict medical supervision, without a prescription due to lack of strict implementation of regulations and monitoring by drug regulatory authorities. The reuse of leftover medicines for curing similar illnesses in future, if need arises, and a reckless discontinuation of the drugs after getting symptomatic relief are other significant reasons for the abuse of self-medication.⁴ Despite the growing research interest in self-medication, little information has been available about its major determinants especially in developing countries. In a country like India, most of the country's population, lives in villages and paradoxically, most of the country's doctors are in urban areas. Odontalgia i.e. toothache is a painful condition which is frequently associated with self-medication with commonly available analgesics. Many patients present to the dental clinics also for treatment but prior to seeking treatment, most of these patients are seen to have been resorting to repeated abuse of self-medication with non-prescription analgesics (NPAs) and some unintentionally overdose too on these products in case symptoms exceed or, in lure of getting immediate relief. The practice of self-medication has been extensively researched but there is dearth of information about its modality amongst dental patients in developing countries. Hence, this study was aimed to determine the prevalence of the practice of self-medication for oral and dental problems amongst 21-60 years old people residing in rural areas of Belgaum taluk. The objectives of the study were to assess the abuse of self-medication, to evaluate awareness about self-medication and to evaluate the risk factors amongst rural population about self-medication of Belgaum taluk, Karnataka, India.

Materials and Methods

Source of data

The study was conducted amongst 230 permanent residents aged 21-60 years from selected villages of Belgaum taluk, Karnataka, India. The study protocol was approved from the Institutional Review Board of KLE VK Institute of Dental sciences, Belgaum, Karnataka, India. The participants were explained about the study and an informed consent was obtained. They were interviewed and the information obtained was entered in an 18-point, closed-ended question based, semi-structured questionnaire.

Area and population under study

10 villages having similar socio-demographic profile were randomly selected from Belgaum taluk in Karnataka state, India.

Method and collection of data

Each village was divided into 4 zones from the centre of the village. A house to house survey was conducted in the area and continued till a sample of approximately 23 was obtained in each zone. The same procedure was repeated for every zone and every village, till a final sample size of 230 was obtained. The subjects were aged between 21-60 years, included both males and females and the ones who were willing to participate in the study were only included in the study; whereas subjects who were unable to provide accurate history, subjects who didn't give informed consent were excluded from the study. the study was carried out from December 2011 to February 2012.

Conduct of pilot study

The questionnaire was tested through a pilot study amongst 10 subjects belonging to rural area of Belgaum taluk, Karnataka, India. The respondents were asked for feedback on the clarity of the questions and whether it was difficult for them to understand and answer the questions or ambiguity, as to what sort of answers, were required. The suggestions were reviewed and incorporated accordingly while few questions were modified also.

Implementation of the survey

On the pre-determined day, as per the above mentioned method, the survey was performed. In the selected zone, every house was visited till the required sample size was achieved. On reaching the house, all the family members who met the inclusion criteria were gathered and the purpose of the survey was explained to them in the language in which they can understand. The scheduled method of data recording was followed for each subject individually where the investigator asked the questions and also gave the options as given in the performa and ticked the answer as told by the participants.

Statistical analysis

Statistical analysis was done using SPSS Version 20. The frequency distributions and percentages were examined for each answer.

Results

51.3% of the participants were males while 48.7% were females. 40% of the participants were illiterate, 8.1% (n=19) Primary school, 5.6% (n=13) Middle school, 15.65% (n=36) High school, 18.69% (n=43) Pre-University College (PUC) while 11.96% (n=27) Graduate and above. 63.91% of the participants (n=147) experienced dental problem while 36.09% (n=83) had not experienced any dental problem (Table 1). 42.17% of the participants (n=62) visited the dental surgeon for dental problem while 57.83% (n=85) had not visited the dental surgeon for dental problem (Table 2). 21.76% of the participants (n=32) visited the family physician for dental problem while 78.24% (n=115) had not visited the family physician for dental problem (Table 3). 70.74% of the participants (n=104) had taken drugs for dental problems while 12.25% (n=18) had used paste, 4.76% (n=7) had used powder while 12.25% (n=18) had not taken anything for dental problems (Table 4). 33.33% of the participants (n=49) had purchased medication without prescription while 44.21% (n=65) had followed old prescription and 20.40% (n=30) had followed prescription of family members or friends (Table 5). 30.27% of the participants (n=23) had used balm, 28.95% (n=22) used clove, 15.78% (n=12) used eucalyptus oil and camphor while 25% (n=19) used lime, jaggery, coal, tobacco, salt, salt and oil as home remedies (Table 6). Majority of them took medications for toothache comprising 57.69% of the participants (n=60) followed by tooth mobility 19.23%

(n=20), tooth decay 14.42% (n=15), swelling and/or, ulcer 8.65% (n=9), both toothache and tooth mobility 8.65% (n=9) and more than 2 problems 18.26% (n=19) (Table 7). 59.61% of the participants (n=62) stopped using medications after relief of complaint while 40.39% of the participants (n=42) continued with the medication even after relief of the complaint for which they were using the medication (Table 8). 30% of the participants (n=69) had knowledge about dose, duration, side effects and interactions of drugs in use while 70% (n=161) didn't have such kind of a knowledge about the drugs they had used (Table 9). 38.04% of the participants (n=35) didn't remember the name of drug, while among the 61.95% (n=57) participants who remembered name of drug, paracetamol was the most commonly used drug accounting for 22.80% (n=13), followed by crocin 19.29% (n=11), Imol 21.05% (n=12), Nimsee 8.77% (n=5), Brufen 5.26% (n=3), Dispirin 5.26% (n=3), Vicks Action 500 7.01% (n=4), Diclomol 5.26% (n=3), Bruzen MR 3.50% (n=2) and Duoflam 1.75% (n=1) (Table 10). Dental surgeon 37.41% (n=55), Pharmacist/chemist 40.81% (n=60), Friends 10.20% (n=15), Family members 14.96% (n=22), Television 3.40% (n=5) were the common source of information about the drugs used (Table 11). Unavailability of dental surgeon 19.04% (n=28) followed by loosening of teeth and weakening of eye sight 18.36% (n=27) were the major reasons for indulging in self-medication (Table 12).

Discussion

Odontalgia is a painful condition which is frequently associated with self-medication with analgesics. Many patients present to the dental clinics also for treatment but prior to seeking treatment, most of these patients are seen to self-medicate with non-prescription analgesics (NPAs) and some unintentionally overdose too on these products. In the present study, 51.3% of the respondents were males and 48.7% were females revealing an almost equal distribution of male and females since they were interviewed in their homes. In our study, 40% of the respondents (n=92) were illiterate while 11.96% (n=27) were above graduate suggesting that ignorance, illiteracy and lack of education might be the reason for self-medication. Although in another study, self-medication was found to be higher in well-educated participants⁵ and this could be an expected observation as information about medicines is easily available through the media, internet and direct-to-consumer advertising as well. Majority of the respondents were in age group of 40-60 years. Nearly 80% of the respondents had income below 7,015/- and so were in the low income strata showing their unaffordability to dental treatments. Among the total 230 subjects, 63.91% of the respondents (n=147) had experienced some or the other form of dental problems, suggesting that dental diseases are highly prevalent. Among the 147 participants, less than half, 42.17% (n=62) visited the dentist thinking that the loss of tooth is one of the natural process related to ageing in life. 21.76% of the respondents (n=32) were so ignorant that they visited the family physician for dental problems. Since physicians are easily accessible, people along with their medical problems, also, turn to them for their dental healthcare needs. Among the 147 participants, 70.74% of the respondents (n=104) had taken drugs, 12.25% (n=18) used paste, 4.76% (n=7) used powder while 12.25% (n=18) had not taken anything for their dental problems. 37.41% of the respondents (n=55) had taken drugs prescribed by their family physician, 33.33% (n=49) felt that the illness was too mild and did not require the services of a doctor and thus, purchased medication without prescription. 44.21% of the respondents (n=65) felt that they had previous experience of a similar illness and even if they go to a doctor, they will be prescribed similar medication, thus, they followed old prescription while 20.40% (n=30) followed prescription of family members or friends since they had similar problem recently and they were cured by taking the same drugs, so why bother to see the physician, as treatment will be the same for all, was their outlook. This can be a very dangerous practice as what suits one's constitution might not suit all and the combination

of drugs could also affect adversely. Also, if we keep taking the same drugs, the body develops tolerance and higher doses are required. There are also cultural factors, in play, since the respondents had been born into a culture where certain specific types of medications, especially herbal medicines were being taken from an early age. Many respondents, while acknowledging the power of modern allopathic medicines, considered herbal remedies more appropriate to treat their illness. Elderly persons in the households possessed knowledge of simple herbal remedies for common illnesses and these remedies were usually tried first by 51.70% of the respondents (n=76), amongst which, clove was considered most effective by 28.95% (n=22); unpredictably zandu balm was used by 30.27% (n=23) while Eucalyptus oil, camphor by 15.78% of the respondents (n=12). The medical shops in Belgaum taluks, also, commonly stocked herbal and ayurvedic preparations, making these drugs easily accessible to the general public. Herbs were considered safe and devoid of adverse effects. This may not always hold true and the possibility of interactions should be kept in mind.⁶ Majority of the respondents took medication for toothache 57.69% (n=60), followed by tooth mobility 19.23% (n=20), tooth decay 14.42% (n=15), for both toothache and tooth mobility 14.42% (n=15), and for more than 2 dental problems 18.26% (n=19). The duration of use of drugs was not specifically enquired into, but in general, drugs were stopped as symptoms improved. 59.61% of the respondents (n=62) stopped the drug after relief of the complaint without completing the course of treatment. Economic constraints were commonly cited as the reason for the premature stoppage of treatment. Of the 230 respondents, most astonishing observation from our study was that 70% of the respondents (n=161) were not even aware about the side effects and interactions of drugs in use. Among the 92 participants who were practicing self-medication, most surprisingly, 38.04% of the respondents (n=35) didn't even remember the name of the drug used by them as self-medication with many of them often had difficulty in recalling precisely the name of the drugs used. In many cases, we had to crosscheck with the medicine packets, tablet strips or medicine bottles kept by the respondents. Paracetamol 22.80% (n=13) followed by Imol 21.05% (n=12), Crocin 19.29% (n=11), Nimsee 8.77% (n=5), Vicks action 500 7.01% (n=4) and other non-steroidal anti-inflammatory drugs (NSAIDs) were the drugs most commonly used for self-medication. Paracetamol and analgesics were the most commonly used class of drugs which was similar to the findings in the literature.^{6,7} In the present study, 63.59% of the respondents admitted to self-medication. Previous studies on self-medication for common illness in India shows in a range between 31.3% to 82%.⁸⁻¹⁰ Advertisement in newspaper, TV, Radio and magazines were the main sources of information for self-medication. Few Studies have been done on self-medication for dental pain. In a survey, the prevalence of self-medication with analgesics for dental pain was 21.37%.¹¹ Similar study done by Baños JE et al for self-medications with analgesics for dental pain was 70%.¹² 19.24% of the respondents (n=20) experienced adverse effects with drugs, most common being acidity. In our study, we found 40.81% of the respondents (n=55) took advice from the chemist for their dental pain, which was quite high when compared with the previous study by Shanmuga P et al in which they showed 22.4% of the pharmacists dispensed antibiotics and painkillers without any referral. But their short-term savings may be counteracted by the long-term effects in the form of problems arising out of inappropriate medicine use. In another study, we found 57.46% of the respondents seeking advice from chemist for their dental pain¹⁰ whereas for 24.48% of the respondents (n=36), source of information was more than one source, friends, family members, television etc. The present study highlights that pharmacist are no more dispensers of medication to patients but their role has expanded to giving medication to the patient. This is a matter of great concern since short-term pain relief means patient will postpone consulting the dental surgeon or physician, thereby, the opportunity to diagnose the disease in an early stage and getting

adequate treatment will be missed and in case of dental problems, this will lead to increasing morbidity as those teeth which could have been saved with timely intervention, then, will be needed to be removed. In the present study, non-accessibility of the doctor was cited as the commonest cause for non-doctor personnel prescribing the drugs, accounting to about 19.04% of the cases (n=28). Other reasons cited were superstitious beliefs like loosening of teeth and weakening of eye sight in 18.36% of the cases (n=27). Also, visits to the dental surgeon were supposed to be expensive and this was one of the most important reason as to why 16.32% of the respondents (n=24) had not approached for dental treatment. In the present study, the people were interviewed directly though some people had failed to recall the names of the medications they had used which might have introduced some differences in the observations and results. In several studies, it has been found that an inappropriate self-medication results not only in wastage of resources but leads to resistance in pathogens, drug dependence in case of certain types of drugs and severe adverse drug reactions owing to their repeated and chronic use over time.¹³ On the other hand, if used appropriately, self-medication can save lives in acute medical conditions and certain emergencies, in addition to, saving the time and being economical.¹⁴ It is now accepted that self-care in the form of responsible self-medication can be beneficial for the patients as well as healthcare providers and the pharmaceutical industry and governments. The World Health Organization (WHO) has also pointed out that responsible self-medication can help prevent and treat ailments that do not require medical consultation every time and provides a cheaper alternative for treating common illnesses.¹⁵ However, it is also emphasized that self-medication must be accompanied by appropriate health care information and should be practiced judiciously.¹⁶ Studies on self-medication show that it is influenced by many factors including education, family, society, law, availability of drugs and exposure to advertisements,¹⁷ highlighting therefore, the need for a proper check and assurance at all levels to practice it the way, it is supposed to be, so that, it can reduce burden on the patients as well as healthcare providers, while simultaneously serving the society, as a bane and not a boon in the form of a bane.

Conclusion

Analgesics were the most common drugs abused for self-medication. The study revealed that mistaken beliefs about medicines and undesirable attitude towards self-medication were the main reasons as to why people resorted to this unsafe practice. In this context, it was also noted that there was insufficient public awareness regarding the consequences of indulging in self-medication and a lack of strict implementation of regulations and monitoring by drug regulatory authorities adding to that. It could thus be concluded that adequate health education of the populace was found mandatory to make people aware of the use and misuse of drugs, especially analgesics, and regarding the potential adverse effects they can show, especially when used repeatedly or, on a chronic basis. Also, dental health care services were supposed to be made readily available and affordable so that self-medication amongst rural patients could be reduced to the barest minimum.

References

1. Sule SS., Ijadunola KT., Onayade AA., Fatusi AO., Soetan RO., et al. Utilization of primary health care facilities: Lessons from a rural community in southwest Nigeria. *Niger J Med* 2008; 17: 98-106.
2. Albany NY. WHO Guidelines for developing National Drug Policies. World Health Organization, Geneva, 1988; 31-32.

3. Montastruc JL., Bagheri H., Geraud T., Lapeyre-Mestre M. Pharmaco-vigilance of self-medication. *Therapie* 1997; 52: 105-110.
4. Raz R., Edelstein H., Grigoryan L., Haaijer-Ruskamp FM. Self-medication with antibiotics by a population in northern Israel. *Isr Med Assoc J* 2005; 7: 722-725.
5. Ernst E. Harmless herbs?: A review of the recent literature. *Am J Med* 1998; 104: 170-178.
6. Drug Utilization Research Group, Latin America. Multi-center study on self-medication and self-prescription in six Latin American countries. *Clin Pharmacol Ther* 1997; 61: 488-493.
7. Arrais PS., Coelho HL., Batista Mdo C., Carvalho ML., Righi RE., et al. Profile of self-medication in Brazil. *Rev Saude Publica* 1997; 31: 71-77.
8. Lal V., Goswami A., Anand K. Self-medication amongst residents of urban re-settlement colony, New Delhi. *Indian J Public Health* 2007; 51: 249-251.
9. Durgawale PM. Practice of self-medication among slum-dwellers. *Indian J Public Health* 1998; 42: 53-55.
10. Phalke VD., Phalke DB., Durgawale PM. Self-medication practices in rural Maharashtra. *Indian J Community Med* 2006; 31: 34-35
11. Ali MF., Prasant MC., Safiya T., Dipak S., Amol C. Self-medication with analgesics for Dental pain: A cross sectional survey. *Indian Journal Practicing Doctor* 2011; 6: 18-20.
12. Baños JE., Bosch F., Toranzo I. Self-medication with analgesics: A study on odontalgia. *Med Clin (Bare)* 1991; 96: 248-251.
13. Kiyingi KS., Lauwo JAK. Drugs in home: Danger and waste. *World Health Forum* 1993; 14: 381-384.
14. Clavinjo HA. Self-medication during pregnancy. *World Health Forum* 1995; 16: 403-404.
15. World Health Organization: Report of the WHO Expert Committee on National Drug Policies; 1995.
16. Kafle KK., Gartulla RP. Self-medication and its impact on essential drugs schemes in Nepal: A Socio-Cultural Research Project; 1993.
17. Hebeeb GE., Gearhart JG. Common patient symptoms: Patterns of self-treatment and prevention. *J Miss State Med Assoc* 1993; 34: 179-181.

Table 1: Shows participants who had experienced dental problems.

	% of subjects
Experienced dental problems	63.91% (n=147)
Did not experience dental problems	36.09% (n=83)

Table 2: Shows participants who visited the Dental Surgeon for dental problems.

	% of subjects
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Visited Dental Surgeon	42.17% (n=62)
Did not visit Dental Surgeon	57.83% (n=85)

Table 3: Shows participants who visited the family physician for dental problems.

	% of subjects
Visited family physician	21.76% (n=32)
Did not visit family physician	78.24% (n=115)

Table 4: Shows types of medications taken for dental problems.

	% of subjects
Taken drugs	70.74% (n=104)
Paste	12.25% (n=18)
Powder	4.76% (n=7)
Did not take anything	12.25% (n=18)

Table 5: Shows participants who had purchased medication without prescription, followed old prescription, followed prescription of family members or friends.

	% of subjects
Taken drugs without prescription	33.33% (n=49)
Followed old prescription	44.21% (n=65)
Followed prescription of family members or friends	20.40% (n=30)

Table 6: Shows participants who had used home remedies for dental problems.

	% of subjects
Total participants who had used home remedies	51.70% (n=76)
Clove	28.95% (n=22)
Balm	30.27% (n=23)
Eucalyptus oil, camphor	15.78% (n=12)

Lime, Jaggery, Coal, Tobacco, Salt, Salt and Oil	25% (n=19)
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Table 7: Shows complaint for which medications were taken.

	% of subjects
Toothache	57.69% (n=60)
Tooth mobility	19.23% (n=20)
Tooth decay	14.42% (n=15)
Swelling, Ulcer	8.65% (n=9)
Both toothache and tooth mobility	8.65% (n=9)
Had more than 2 complaints	18.26% (n=19)

Table 8: Shows either the medications were continued or stopped after relief of complaint by the participants.

	% of subjects
Stopped	59.61% (n=62)
Continued	40.39% (n=42)

Table 9: Shows participants who had knowledge about Dose, Duration, Side effects and Interactions of drugs in use.

	% of subjects
Had knowledge	30% (n=69)
Did not have knowledge	70% (n = 161)

Table 10: Shows commonly used drugs for self-medication in past 1 year.

	% of subjects
Did not remember name of drug	38.04% (n=35)
Remembered name of drug	61.95% (n=57)
Paracetamol	22.80% (n=13)
Crocin	19.29% (n=11)
Imol	21.05% (n=12)

Nimsee	8.77% (n=5)
Brufen	5.26% (n=3)
Dispirin	5.26% (n=3)
Vicks action 500	7.01% (n=4)
Diclomol	5.26% (n=3)
Bruzen MR	3.50% (n=2)
Duoflam	1.75% (n=1)

Table 11: Shows common sources of information about drugs.

	% of subjects
Dental Surgeon	37.41% (n=55)
Pharmacist/ Chemist	40.81% (n=60)
Friends	10.20% (n=15)
Family members	14.96% (n=22)
Television	3.40% (n=5)
More than 1 option	24.48% (n=36)

Table 12: Shows common reasons for indulging in self-medication.

	% of subjects
Unavailability of Dental Surgeon	19.04% (n=28)
Loosening of teeth and weakening of eye sight	18.36% (n=27)
Consultation and treatment not affordable	16.32% (n=24)
Fear of dental treatment	11.56% (n=17)
More time required for treatment	10.20% (n=15)
Far from home and working place	5.4% (n=8)
More than 1 option	19.04% (n=28)