Original Article

Toothache and Self-Medication Practices: A Study of Patients Attending a Niger Delta Tertiary Hospital in Nigeria

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Abstract

Background: There is evidence that self-medication practices among dental patients with toothache are common, and despite the adverse clinical consequences, there is a paucity of literature on it, and only few programs are available for its control. **Aim:** The aim was to assess the self-medication practices among adult dental patients suffering from toothache. **Subjects and Methods:** An instrument adapted from modified form of 117-item self-report questionnaire based on world Health Organization guidelines for students' substance use survey and open-ended questionnaire was administered to adult patients attending the Dental and Maxillofacial Surgery Clinic of this Health Institution for a period of 6 months. **Results:** The results show that 80.6% (287/356) subjects indulged in self-medication practices. Majority of the patients 42.9% (123/287) were in the 2-4th decades of life, whereas the male: female ratio was 1.3:1. The most commonly abused medications/substance was analgesics/non-steroidal anti-inflammatory drug (243/287; 24.5%), antibiotics (233/287; 23.5%), "touch and go" (187/287; 18.8%). The practice of self-medication cut across all social strata, $P < 0.01$ (significant) and only 3.8% (11/287) subjects admitted knowledge of the dosage and side-effects of the used medications/substances. The toothache not being serious initially (112/287; 22.5%) and time constraints to attend dental clinic (93/287; 18.7%) were the major reasons for self-medication. **Conclusion:** This study suggests that the practice of self-medication is common among adult dental patients with toothache in Nigeria. This should be reduced to the barest minimum by dental health education, upgrading of dental health facilities, and enforcement of drug control mechanisms.

Keywords: Dental patients, Toothache, Self-medication, Nigeria

Introduction

Self-medication is the inappropriate use of drugs to treat self-diagnosed disorders or symptoms of the disease, or the intermittent or continued use of a prescribed medication for chronic or recurrent disease or symptoms.[1,2] Self-medication is commonly practiced all over the world.[3-5] Following economic recession worldwide and its attendant worsening human living conditions, most countries are facing serious health problems with their people finding it difficult meeting their health needs. Evidence from the existing literature suggests that most people involved in self-medication practices acquire the knowledge from medicine dealers, neighbors, relatives and media houses both print and electronic.[6,7] In the developed world, the practice is guided because people are generally more enlightened and can readily gather adequate information from different sources.[8,9] However, in developing countries like Nigeria, the situation is disheartening, especially because of poor medical/dental services available, and lack of proper control of pharmaceutical products by the relevant government agencies.[10,11]

Even though the practice is on the increase, there is a paucity of data on the impact of this behavior on the people, and few studies that have been carried out showed harmful effects on the dentition.[10,12] In developing countries, it has been observed

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that several factors such as poverty, cultural perception of certain diseases, and their perceived responses to indigenous medications have been reported as reasons making the practice a necessity.[5,6]

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.[10,13-15] 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, there is a paucity of literature on it, inadequate awareness created on its harmful clinical effects, and programs for its control in the society. This research is, therefore, a baseline study aimed at determining the self-medication practices, medications used and duration; assessment of the awareness of the dosage and their side effects, and the reasons for self-medication among adult dental patients that presented in our center for a period of 6 months.

Subjects and Methods

An open-ended questionnaire on self-medication practices was administered to adult dental subjects attending the Dental and Maxillofacial Surgery Clinic of this health institution from March to August 2012 (6 months) by the lead author with the assistance of professional colleagues. The sampling technique used in the study was the cluster method. Patients who had used self-medication before presentation were recruited for the study after obtaining informed consent. Those excluded from the study include patients that did not use self-medication before presentation. Patients who were 17 years and below and those suffering from chronic debilitating medical conditions like sickle cell disease, uncontrolled diabetes mellitus, malignant neoplasm, hepatic and renal diseases were also excluded from the study. Training sessions were held with the research assistants, and in order to ensure uniformity in recording relevant data, they were trained on data collection and questionnaire interpretation. Subjects were screened by using a questionnaire adapted from the modified form of 117-item self-report instrument based on World Health Organization guidelines for students' substance use survey to identify those who practiced self-medication, and gave a history of toothache.[16] The three sections of the questionnaire were modified, and the number of items in the modified questionnaire was 11. The questionnaire containing closed and open-ended questions was pre-tested before application on the subjects studied. Ethical approval was obtained from the Research Ethics Committee of this institution, and the study conducted in accordance with the Helsinki Declaration of 1975, as revised in 2000. Information was obtained using the examiner administered, semi-structured questionnaires, and these included patients' age, gender, socio-economic status, medication used and duration including knowledge of the dosage and side effects. Also investigated, was the reason (s) for resorting to self-medication practice. Patients' socio-economic status was classified using Adedeji's classification of 1985.[17] Results obtained were analyzed using EPI INFO 7, version 0.2.0, 2012 software package (Centers for disease control and prevention, Atlanta, GA, USA). Data were presented as frequencies, percentages, mean, and standard deviations. Comparative statistics was done using Fisher's exact test, and $P < 0.05$ was considered as significant.

Results

When exclusion criteria other than the non-practice of self-medication were considered, 356 patients met the requirements for inclusion in the study. However, 287/356 (80.6%) indulged in self-medication practices. The age of patients ranged from 18 to 75 years, with the majority (123/287; 42.9%) in the 2-4th decades of life [Table 1]. The mean age was 35.6 (6.4) years, and there were more males (n = 161, 56.1%) than females (n = 126, 43.9%) with male: female ratio of 1.3:1. In all the age categories, the male gender outnumbered the female. There was no significant association between age and gender distribution of subjects and the practice of self-medication (P = 0.09). The number of subjects decreased with higher social class as follows: Class 1 (n = 40, 13.9%), class 2 (n = 48, 16.7%), class 3 (n = 61, 21.3%), class 4 (n = 67, 23.4%) and class 5 (n = 71, 24.7%). Table 2 shows that the practice of self-medication cut across all the social strata and that the majority of the subjects used combination of drugs/substances ($P < 0.01$, significant). In addition, orthodox medications rather than unorthodox were mostly used by the subjects for self-medication. Furthermore, the use of herbal concoction, alcoholic hot drinks and charcoal increased with decreased social class whereas the reverse was the case with analgesic/non-steroidal anti-inflammatory drug (NSAID), antibiotics, warm saline mouthwash, and "touch and go." The durations of self-medication practices by the subjects are as follows: 1 week or less, 53 (18.5%), 2-3 weeks, 107 (37.3%), 4-5 weeks, 96 (33.4%) and >5 weeks, 31 (10.8%). Only 3.8% (11/287) subjects admitted knowledge of the dosage and side effects of the medications they used while 96.2% (276/287) were ignorant. Table 3 shows the reasons for resorting to self-medication practices; the toothache not being serious initially and time constraints to attend dental clinic because of busy work schedule and time wasting in the hospitals before consultation were predominant (41.2%; 205/498).

Discussion

The existing literature shows that the prevalence of self-medication practices varies from place to place depending on the study population, and the age group under consideration.[1-4] The result from this study suggests that the practice of self-medication is common among adult dental patients with toothache in our environment. The prevalence of 80.6% obtained is higher than previous reports on a similar study.[10,12,18] The higher figure obtained in the present survey may be because the study was restricted to patients' that presented with the only toothache

Table 1: Age and gender distribution of subjects

Age (years)	Males	Percentage	Females	Percentage	Total	Percentage
18-27	36	12.5	22	7.7	58	20.2
28-37	34	11.9	31	10.8	65	22.7
38-47	24	8.4	23	8.0	47	16.4
48-57	31	10.8	25	8.7	56	19.5
58-67	22	7.6	16	5.6	38	13.2
68-77	14	4.9	9	3.1	23	8.0
Total	161	56.1	126	43.9	287	100.0

χ^2=1.977, *P*=0.85 (not significant)

Table 2: Distribution of drugs/substances used according to social class

Drugs/substances	Number					Total	Percentage
	1	2	3	4	5		
Analgesic/NSAID	38	44	56	53	52	243	24.5
Antibiotics	37	42	50	47	57	233	23.5
Touch and Go	26	31	42	40	48	187	18.8
Warm saline mouth wash	28	21	38	41	45	173	17.4
Hot (alcoholic) drinks	2	6	12	33	29	82	8.3
Herbal concoction	0	0	2	23	28	53	5.3
Charcoal	0	0	0	8	14	22	2.2
Total	131	144	200	245	273	993	100.0

P<0.01 (significant). NSAID: Nonsteroidal inflammatory drug

Table 3: Reasons for resorting to self-medication practice

Reasons	Number	Percentage
Toothache not serious	112	22.5
Time constraints	93	18.7
Thought problem will be solved	86	17.3
Financial	82	16.5
Thought treatment will be tooth removal in the clinic	64	12.8
Far distance to the clinic	61	12.2
Total	498	100.0

to the clinic unlike the other reports that were based on dental patients whether with or without toothache. This high figure is to be expected as there are only few dental clinics in this environment and the distances to them are far for the majority of the populace.[19] The peak age category obtained in this study is similar to previous hospital-based reports[10,12] but differs from those of Kikwilu *et al.*[20] that was based on adult patients embarking on emergency dental consultation. There was a male (56.1%) predominance over the female gender in this study. This is because females tend to seek medical/dental help more promptly than their male counterparts, which may be the reason for their less indulgence in self-medication practices.[19,21] Regarding the duration of self-medication before presentation at the hospital, our report is not different from previous studies where the patients delay attendance and only come when the pain become unbearable after this practice must have failed to resolve their health problems.[22,23]

This study shows that lower social class was significantly associated with self-medication for toothache before presentation to the clinic. The major reasons for this finding include toothache not being serious and time constraint to attend dental clinic because of busy work schedule and time wasting before consultation. This is to be expected because of the ignorance of the people about dental issues and the profession, coupled with the slow consultation process in the clinics in our environment.[19] The most commonly abused substances/medication is analgesics/NSAID (aspirin, panadol/cataflam) and antibiotics (ampiclox, amoxicillin), while the least abused are alcoholic drinks, herbal concoction, and charcoal. This is because analgesics and antibiotics are widely available and easily procured over the counter in our environment.[19] The use of analgesics, antibiotics, warm saline mouthwash and "Touch and Go" by those in higher social class, and herbal concoction, alcoholic hot drink and charcoal by those in lower social cadre may be due to their health beliefs, which to some extent determines human responses to sickness. These beliefs involve the perceived benefits to be derived by embarking on such treatments. Furthermore, in spite of the feeble knowledge of the efficacy of these medications among the patients, this alternative dental care is probably more affordable and accessible to them, as well as temporarily relieves of their toothache. Furthermore, the findings from this study suggest that there are many alternative consultations embarked upon by these dental patients as evidenced by the several medications seen to have been used by them. Afolabi *et al.*[10] have reported the use of drugs in combination by their patients, although they suggested it was because of other associated concurrent chronic illnesses, which may not be the same as in the present study. In the present study, this behavior cut across all social strata of the subjects, and it shows the belief on the efficacy of these medications and practice of self-medication. However, the implication could be dangerous as complications-related to drug interaction may be a major problem. "Touch and go" made for oral use is a red liquid that contains two active ingredients, clove oil 3.12%, which is a local anesthetic agent and Tolu of balsam, 1.25%. Other constituents are menthol 1.25%, solvent ether 1.5%, phenol 1.25%, cajuput oil 2.5%, and vehicle to 100%. According to the manufacturer, it is used for the temporary relief of pain caused by recurring mouth ulcers, denture irritation and teething. Evidence suggests that substances like phenol contained in "touch and go" are an important risk factor in worsening the condition of the teeth by deceitfully relieving pain, but causing necrosis of the pulp and eventually irreversible

pulpal damage. These are the reasons why dental practitioners should routinely ask their patients about self-medication practices during consultation in order to provide appropriate care and advice during management. Also, some orthodox medications such as antibiotics, analgesics and NSAID were used by the subjects. This can be dangerous as the sources and instructions concerning the use of these medications are not from health professionals as issues of inadequate dosing and antibiotics resistance may arise. This behavior resulting in intake of a suboptimal dose of antibiotics and excess dose of analgesics/NSAID may lead to the development of resistant bacterial strains, hepatic damage and gastrointestinal complications, respectively.[10,24,25]

With self-medication prevalent in our environment, the problem of counterfeit and expired drugs comes to question. This is because the sale and control of some of these drugs be lacking resulting in the availability and use of expired and counterfeit drugs. The problem of poverty and low level of education in our society compound this problem, and it may be the source of many chronic and protracted illnesses in our environment. Efforts should be geared towards ensuring that only authorized professionals are involved in the production, importation, distribution, marketing and prescription of pharmaceutical products by the relevant government agencies.

Activated charcoal derived from wood or coconut sources and prepared in loose powder and in capsule form is an effective medicament in food poisoning as it is a highly absorbent substance.[26] It is effective in changing the potential of Hydrogen and improving the health of the mouth such as teeth whitening, preventing cavities and killing cariogenic bacteria, and as part of remineralizing protocol for teeth.[27] Furthermore, activated charcoal has been effectively used to promote healing and relieve pain associated with toothaches, gingival diseases, canker sores and dental infections including abscesses.[28] However, when activated charcoal is ingested at the same time as medication, supplements and foods it may decrease their absorption and utilization, and can also cause constipation and harmless blackening of stools.[26,27]

The warm saline mouthwash solution has anti-bacterial, anti-edema, soothing qualities, mechanical effect, and also enhances the survival of oral commensals.[29] The salt contained in it, is a natural disinfectant and in addition removes swellings from tissues. It is a good short-term treatment when there is wound in the mouth. Contrary to this, under long-term treatment, the salt is acidic and could erode the teeth, but not abrasive to it.[30] The acidity of the salt can eat away and soften the enamel on the teeth making them more susceptible to wearing, chipping and eventually cavity formation.

The use of herbal concoctions and alcohol by the subjects to alleviate toothache should also be of concern to clinicians. The types and contents of these herbal preparations vary according to different cultures and customs of the people.[6] Also worrisome is the well-known fact that chronic usage of alcohol can predispose subjects to cancers including oral malignancies.[5,6] The difficulty in estimating the correct and adequate dosages of these substances may pose a serious health problem by causing more harm to the dentition and the overall health of the patient. This finding in this study is a serious health concern because of the poor knowledge of the safety profiles of these substances.

This study has shown that most of the patients were on self-medication before presentation at the clinic. As observed in this study, and according to previous researchers,[11,23,31,32] the shortfall of self-medication is the lack of clinical evaluation of the condition by a trained medical/dental professional, which could result in missed or delayed diagnosis, delays in appropriate and effective therapy, increase inorganic risks due to inadequate drug therapy or of unnecessary use of expensive medication, and drug interaction between prescription and non-prescription drugs. However, following hand and on-line search for the relevant literature on toothache and self-medication practices, there appears to be a paucity of research work and data on this topic despite its adverse dental/medical consequences. Due to this, it was not possible to compare some of the results of the medications/substances used by the subjects in this study with previous reports. The limitations of this study include the disclosure on the practice of self-medication by the patients which was based on self-report and which may not be wholly reliable. Similarly, it was difficult to determine the outcome/impact of these medications on the subjects studied because of the short duration of this study. Furthermore, this study was hospital-based rather than community-based which would have accounted for the limited number of subjects recruited.

The practice of self-medication following toothache is common in Nigeria, and it cuts across all social strata of the adult dental population. This practice should be eradicated or reduced to the barest minimum by adequate and consistent dental health education, upgrading of dental health facilities, embarking on regular enlightenment campaign to encourage dental healthcare services utilization, and strict drug control mechanisms by ensuring that drugs/substances are not prescribed and sold irrationally.

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