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Perceptions and Factors Associated with Self-Medication for Oral Health Problems in Dental Patients of LUMHS, Jamshoro

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ABSTRACT

The practice of self-medication is widespread in both industrialized and developing nations. It is characterized by the use of medications to treat self-diagnosed conditions and the prescription of medications without appropriate professional advice. However, the illogical use of antibiotics contributes to antibiotic resistance and has several negative repercussions. **Objectives:** To assess the perceptions and factors associated with self-medication for oral health problems among dental patients of Liaquat University of Medical and Health Sciences, Jamshoro. **Methods:** 335 respondents were included in this cross-sectional study conducted at the Oral Diagnosis Departments of Liaquat University of Medical and Health Sciences, Jamshoro. The study was completed in a time duration of two months by employing a non-probability consecutive sampling technique. The data were subjected to descriptive analysis. SPSS Version 26.0 was employed to analyze the data. **Results:** 73% of total subjects were taking self-medication as the reason for minor illness (36.3%). Most of the patients were affected by having age of 18-30 years (45.4%) and female had more predilection (54.9%). Toothache was the most common cause of self-treatment (49.4%), pain relievers were the most common drugs taken as self-medication (24.5%), and Friends and relatives were the main sources of advice (59.2%). **Conclusions:** It was concluded that self-medication for dental illnesses was quite popular among patients. Although the majority of patients got symptomatic relief through self-medication all the respondents agreed that this was not the right practice and that proper consultation is important. Literacy level had a bad impact on people's choices of self-treatment.

INTRODUCTION

Self-medication is very common and used worldwide [1]. It is described as selecting and taking medicines, and medicated products including herbal and traditional products by a person to treat self-evaluated health problems or continuous use of medicine previously advised by a doctor, for a chronic illness or a recurrent disease [2, 3]. Under some circumstances self-medication can be a beneficial tool for managing minor illnesses in mountainous and tribal areas where health facilities are not accessible due to geographical discrepancies and WHO has stated guidance for some over-the-counter medicines which are available without doctor's advice [4-6]. Self-medication also has possible hazards like failure to diagnose the problem correctly, failure or delay in getting proper medical advice, inappropriate selection of therapy, failure in detecting the possible drug interactions, contraindications not being able to inform current self-medication to the prescribing doctor (which increases the chance of double medication or serious interactions), improper dosage and duration of medication, the danger of dependence and abuse. The factors that affect self-medication are gender, socioeconomic factors, behavior toward personal well-being, and awareness about medication [7-9]. Some other causes of self-medication

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stated by another study were prolonged hours of waiting in health care centers and minor ailments. Frequent causes of self-medication are headache, cough, fever, and pain. Oral health problems such as dental pain, gum bleeding, discomfort, and bad breath along with some other problems are common causes of self-medication. As self-medication is a common problem in developing countries and antibiotic resistance is also becoming common nowadays, people take their symptoms lightly and self-medicate which has become a matter of concern [10-12]. Therefore, the rationale of this study is that the self-medication practice is becoming common in dental patients and only a few studies have also been done to evaluate the perceptions and factors associated with self-medication in dental patients but still, there is a need to assess self-medication among patients coming with dental problems, the socioeconomic factors and literacy rate associated with this problem, dental phobia, the type of medicine taken as self-medication and type of dental problem which led them to take medicine on their own.

Self-medication for oral health problems represents a significant and growing public health concern in developing countries like Pakistan, where limited access to dental care, financial constraints, geographic barriers, and low health literacy collectively drive patients toward unsupervised use of painkillers, antibiotics, and herbal remedies that risk masking serious pathology, promoting antibiotic resistance, and causing adverse drug interactions. Toothache, gum bleeding, and oral swellings are among the most prevalent dental complaints prompting self-treatment, yet patients frequently rely on advice from friends, relatives, and pharmacists rather than seeking timely professional dental consultation, perpetuating cycles of delayed diagnosis and inadequate management. While self-medication practices among dental patients have been studied in various international settings including Saudi Arabia, India, and Malaysia, locally contextualized data from Sindh, Pakistan, specifically examining the perceptions, motivating factors, types of medications used, and their association with educational attainment among dental outpatients remain sparse and insufficient to guide targeted health communication interventions. This study therefore aimed to assess the prevalence, perceptions, and factors associated with self-medication for oral health problems among dental patients attending the Oral Diagnosis Department of Liaquat University of Medical and Health Sciences, Jamshoro.

METHODS

The cross-sectional study was conducted among dental patients at the Oral Diagnosis/Oral Medicine Out-Patient Department of Liaquat University of Medical and Health Sciences Jamshoro by a non-probability consecutive sampling technique contained by two months of the period i.e. (July to September 2021) after getting ethical approval from the university (NO. LUMHS/REC/-118). Informed consent was taken by patients / Guardians. Inclusion criteria consisted of gender, age between 18-50 years, patients showed a willingness to participate in the study by signing the written consent, and differently able patients and pregnant women were excluded from the study. The sample size was calculated by using the standardized formula for cross-sectional studies using an error margin of 5% at a confidence interval of 95% and a prevalence of self-medication67.8% [2]. The sample size calculated was 335. Patients fulfilling the inclusion criteria were asked to answer the questions from a questionnaire on Self-medication the first part of the questionnaire asked whether a respondent practices self-medication or not and the respondents who did not opt for self-medication were advised to discontinue the remaining portion of the survey and the subjects who admitted that they do adopt self-medication practices gave the answers of remaining questions. The questionnaire was designed by going through a few studies [6-8]. The initial part of the questionnaire had questions regarding personal information like age, gender, qualification, marital status, and occupation and the other questions were about the behaviors, patient's perceptions regarding this practice, reasons, and type of drugs being consumed as self-medication due to common oral health problems. The data were analyzed by SPSS version 26.0. Descriptive Statistical analysis was used for frequencies. The chi-square test was used to find out the association between self-medication and educational qualification.

RESULTS

The participants in this study were between 18 and 50 years old. A total of 335 subjects were included in the study. The majority of them belonged to the age group 18-30 years (45.4%), 27.8% were from the age group of 31-40 years, and 26.9% were from the age group 41-50 years. Gender distribution shows female were in preponderance 54.9% were female and 45.1% were male. Educational status of patients shows that 1.8% were educated up to Class 8 (Middle school), 22.7% were qualified with a bachelor's degree, 11% studied up to intermediate level, 7.8% were masters qualified, 13.7% were qualified to matriculation level, 13.1% had primary education, and 29.9% were unschooled (Table 1).

Table 1: Socio-Demographic Characteristics of the Participants

Variables	Frequency (%)
Age	
18-30	152 (45.4%)
31-40	93 (27.8%)

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41-50	90 (26.8%)
Gender	
Male	151 (45.1%)
Female	184 (54.9%)
Education	
Eight grade	6 (1.8%)
Primary	44 (13.1%)
Matriculation	46 (13.7%)
Intermediate	37 (11.0%)
Graduate	76 (22.7%)
Masters	26 (7.8%)
Unschooled	100 (29.9%)

The percentage of self-medication in our study was 73% who responded positively when they were asked about opting for self-medication and the remaining 27% were not involved in self-medication practices. Total of 245 patients who said yes to self-medication, 31.4% patients opted for self-medication because of gum bleeding, 4.1% self-medicated for oral ulcers, 49.4% self-medicated for toothache, 12.7% went for self-medication practices. For toothache and gum bleeding, 2.4% of patients were self-medicating for toothache and oral ulcers. Among 245 patients who self-medicated for oral health problems 13.9% used herbal products as treatment, 0.4% used herbal products and salt water rinse as treatment, 22.9% patients used other aids of treatment, 0.8% patients answered that they use salt water rinse and other things as self-medication measure, 17.6% used painkillers along with antibiotics for self-medication, 0.4% used pain killers, antibiotics and herbal products for self-medication, 0.8% used painkillers and herbal products, 24.5% used painkillers, 10.6% used pain killers along with other things, 4.9% patients used painkillers along with salt water rinse, 0.4% used painkillers, antibiotics and salt water rinse and 2.9% only used salt water rinse for self-medication. 245 patients who were doing self-medication the treatment duration was a few days in 13.1% of patients, only a single dose was taken by 46.9% of patients, and 40% of respondents used medicine till the symptom was relieved as shown in (Table 2).59.2%were self-medicating on friends and relatives advise, 9% were doing self-medication on friends, relatives and pharmacist advise, 1.6% were self-medicating from mass media sources, 11.8% self-medicated on basis of personal knowledge and 18.4% were getting advice from a pharmacist. Amongst 245 patients 26.1% said that they were self-medicating because of lack of time, 0.2% said that lack of time and shortage of money was the reason behind self-medication, 24.1% said that their reason for self-medication was a long distance from home to a health care facility, 36.3% thought that it was a minor illness,12.7% people gave the reason for the shortage of money. 245 subjects who did self-medication, 93.9% subjects said that their symptom was relieved by self-medication and 6.1% patients said that their symptom was not relieved by self-medication (Table 2).

Table 2: Self-Medication Practices, Types and Durations

Variable	Frequency (%)
Self-Medication	
Yes	245 (73%)
No	90 (27%)
Oral Health Problem	
Gum Bleeding	77 (31.4%)
Oral Ulcers	10 (4.1%)
Toothache	121 (49.4%)
Swelling	31 (12.7%)
Bad Breath	6 (2.4%)
Type of Medication	
Herbal Products	34 (13.9%)
Herbal Products/Salt Water Rinse	1 (4.0%)
Others	56 (22.9%)
Other/Herbal Products	2 (8.0%)
Painkiller/Antibiotic	43 (17.6%)
Painkiller/Herbal Product/Antibiotic	1 (4.0%)
Painkillers/Herbal Products	2 (8.0%)
Painkillers	60 (24.5%)
Painkiller/Others	26 (10.6%)
Painkiller/Salt Water Rinse	12 (4.9%)
Painkiller/Antibiotic/Salt Water Rinse	1 (4.0%)
Salt Water Rinse	7 (2.9%)
Treatment Duration	
Few Days	32 (13.1%)
Single Dose Only	115 (46.9%)
Till Symptoms Relieved	98 (40.0%)
Adviser	
Friends and Relatives	145 (59.2%)
Friends/Relatives/Pharmacist	22 (9.0%)
Mass Media	4 (1.6%)
Personal Knowledge	29 (11.8%)
Pharmacist	45 (18.4%)
Reasons for Practicing Self-Medication	
Lack of Time	67 (26.1%)
Lack of Time/Shortage of Money	2 (8.0%)
Long Distance From Home to Health Care Facility	59 (24.1%)
Minor Illness	89 (36.3%)
Shortage of Money	31 (12.7%)
Symptoms Relieved	
Yes	230 (93.9%)
No	15 (6.1%)

A chi-square test was applied to check the association between educational status and self-medication practices and we found that the p-value is less than 0.05, which means that there is a significant relationship between self-medication and education (p-value-0.001)(Table 3).

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Table 3: Self-Medication versus Educational status

Variables		df	Asymptotic Significance (2-Sided)
Pearson Chi-Square	74.251[a]	6	0.001
Likelihood Ratio	71.742	6	0.001
N of Valid Cases	335	--	--

a.2 cells (14.3%) have an expected count of less than 5. The minimum expected count is 1.63.

DISCUSSION

In this study, the most common age group of study participants was 18-30 years and more participants were female, this is in contrast with another study conducted in Dehradun, Uttara hand by Kumar *et al.*, in which the most common age group was 30-39 years and most patients were male [13]. Another study by AlQahtani *et al.*, conducted a study in the United Arab Emirates (UAE) which found the prevalence of self-medication at 70.7% for dental illnesses, which is close to the results of this study which found the percentage of self-medication at 73% [14]. In this study, 46.9% of participants took a single dose of medicine for symptom relief and the majority of subjects (53.1%) took medicines for a few days. Our study noted that taking medicine on their own without prescriptions was seen in a higher proportion among female than male which is in contrast with another study being done at Davangere city, Karnataka, which noticed that men were more inclined towards this practice than women [15]. There was a research done in Davangere city in which the perception of self-treatment for oral health problems among participants was mainly minor illness, which is in agreement with this study which also noticed subjects were mainly inclined towards self-treatment for oral health problems most commonly because they think that it is a minor illness. Another study conducted in Riyadh Saudi Arabia noticed a higher female-participant ratio of self-treatment than male. Among oral health problems, toothache was the main reason for self-treatment (49.4%) similar to our study [16]. A study held in a teaching Hospital in Lahore Pakistan by Baig *et al.*, found 58.8% use of oral painkillers and painkillers with antibiotics (13.4%) among participants for dental problems [17], which is in contrast with this study that found 13.9% of respondents using herbal products, 24.5%respondents used pain killers, 22.9% used other modes of oral health problem solutions and 10.6% subjects consumed pain relievers along with others. The percentage of antibiotics used with painkillers is close to this present study which is 17.6%. The main advisors were friends and relatives for the self-treatment in our study, pharmacists were a second common source of self-treatment and personal knowledge was the third common factor of self-medication in our study. There was research done by Kalyani *et al.*, whose findings were close to our results, found that the people residing in city areas were mainly seeking self-medication advice from family and friends, then their knowledge and then getting advice from pharmacists [18]. In the present study, self-treatment was seen more in participants who had no formal education, also seen in considerable percentage in those respondents who had primary education, middle education, and studied up to graduate level. The respondents who were qualified up to masters were least involved in self-treatment practices and we found an association existed between self-medication and education level. The results of our study are close to another study that found self-treatment was more in respondents who had secondary and tertiary education [19, 20]. This can be because educated people have knowledge of medicines and their uses and they try to treat their ailments by themselves instead of going to the concerned doctor, whereas individuals like those in our study who are qualified up to master are more concerned about the proper diagnosis and treatment rather than self-medicating and the people who do not have a formal education tend to self-treat themselves because of lack of awareness regarding drug side effects, interactions and socioeconomic reasons [21, 22]. Self-treatment is a common practice in developing countries, which can lead to several problems like antibiotic resistance, drug interactions, late diagnosis and management of serious diseases, worsening of the existing condition of disease, and many other problems.

This study was constrained by its cross-sectional design, two-month data collection window, single-center setting at LUMHS Jamshoro, and use of non-probability consecutive sampling, all of which limit the representativeness and temporal generalizability of findings to Sindh's broader dental patient population across diverse socioeconomic and geographic settings. The self-reported nature of the questionnaire introduces social desirability bias, as participants may have underreported stigmatized behaviors such as antibiotic misuse, and the exclusion of patients below 18 years and those with certain conditions further restricted the study population. Additionally, the absence of data on specific antibiotic types, dosages, duration of use, and previous dental consultation history limited the depth of analysis regarding antibiotic misuse patterns and their contribution to resistance. Future research should employ multicenter, longitudinal designs spanning both urban and rural communities in Sindh and other provinces, incorporating qualitative methods to explore the cultural, financial, and structural determinants of dental self-medication behavior in greater depth. Community-based intervention studies evaluating the effectiveness of targeted dental health literacy campaigns, particularly among low-

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educated and rural populations, and policy-level investigations into pharmacy dispensing practices for dental antibiotics without prescription, would provide the comprehensive evidence base needed to develop effective strategies for reducing self-medication and improving oral healthcare-seeking behavior in Pakistan.

CONCLUSIONS

There was a huge number of participants practicing self-medication for oral health problems in this study, the majority of them were females. Toothache remained the most common reason for self-medication, the main factors were considering oral health problems as minor illness, lack of time, and long distance from home to a health care facility, the most common medicine taken was painkillers, friends, pharmacists, and relatives were the main sources of self-treatment. In this study, a significant association between self-medication and education was found.

Authors' Contribution

Conceptualization: FS
Methodology: FS, SPR, NT, SS
Formal analysis: RK
Writing and Drafting: RK, SS, MS, BC
Review and Editing: RK, SS, MS, BC

All authors approved the final manuscript and take responsibility for the integrity of the work

Conflicts of Interest

All the authors declare no conflict of interest.

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