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Prevalence and factors related to self-medication among patients attending the Dental Teaching Hospital, Peradeniya, Sri Lanka

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Abstract

Introduction: Nowadays, self-medication is a common practice all over the world for dental diseases.

Objectives: To assess the prevalence and associated factors of self-medication among dental patients attending a teaching hospital in Sri Lanka

Methods: A cross-sectional study was conducted among dental patients who attended Dental Teaching Hospital, Peradeniya. A self-administered questionnaire was shared among the patients after getting the consent between December 2024 and January 2025. Pretest was done with 20 patients and the modified questionnaire was administered among patients to collect the data. Data were analysed using SPSS version 26.0.

Results: The sample size was 196. Among them, 115 patients had sought self-medication before dental treatment (58.2% of the females and 58.9% of the males). Of them, 57.7% earned less than Rs 30000 per month, while 60.3% of the patients were in the monthly income category of LKR 31,000-50,000. In the monthly income category of >LKR 50,000, 58.3% of patients used self-medication for dental diseases. Chi-squared test revealed that there was no association of self-medication with monthly income, participant's educational level and participant's age ($p>0.05$).

Conclusions: More than half of the patients who attended for dental treatment had the practice of self-medication at any point for dental diseases. There was no significant association between patients' age, gender, monthly income and level of education with the practice of self-medication for dental diseases.

Key words: *Self-medication, Prevalence, Associated factors, Dental Hospital Peradeniya*

Introduction

Oral health is an important element to complete the term of general health wellbeing. Standard dental health promotes the individual's overall quality of life and enhances self-esteem and social confidence (1). Dental diseases can range from dental caries, oral cancer, periodontal problems, tooth wear and developmental dental disorders (1). Oral diseases have a high prevalence rate, and they can impact society and individuals (1-3). Dental conditions can cause pain, discomfort, sleeping difficulties, poor nutrition related to difficulty in eating, and it may impact the activities related to school or work (1, 4). There are advanced technologies to diagnose and treat the dental problems (5). Most dental patients take analgesics to reduce dental pain and sometimes antibiotics too (6).

Seeking medication is the commonest behaviour among humans during illness (7). Self-medication can be defined as gathering and taking drugs without proper consultation of a clinician about their diagnosis or disease conditions (5). The self-medication has been defined by the World Health Organization as "the use of pharmaceutical or medicinal products by the consumer to treat self-recognized disorders or symptoms, the intermittent or continued use of a medication previously prescribed by a physician for chronic or recurring disease or symptom, or the use of medication recommended by low sources or health workers not entitled to prescribed medication" (8). Nowadays, self-medication is a common practice all over the world (9).

Recent evidence shows that developing countries have an inverse trend (7, 9). They have an increasing prevalence of dental problems but there are a low number of dental visits to dental health care services. This trend reveals that many individuals from these regions use self-medication for oral health problems without a proper prescription from a dentist or physician (7, 10). The reason is some countries do not have appropriate healthcare settings or health care seeking involves a high cost (7). Unawareness of treatment and myths about treatment lead patients to self-medication could be another explanation (8).

People in countries like Argentina have a high trend towards self-medication due to poor health care services and lack of control in pharmaceutical dispensing by the government (9). Around 8-13% of the European and American population use self-medication for dental diseases (6). Developed countries have strict rules and regulations in drug dispensing leading to restricted self-medication practices in those regions (11). India has an escalating level of self-medication practices from 31% in 1997 to 71% in 2011 (8).

Reason for self-medication varies from person to person according to situation. Most of the time people like to have self-medication due to poor access to health care, urge of caring themselves, no time to get treatment, easy access to medicine or prescription of the drug without consultation, poverty, ignorance, media advertisement, to prevent complications with traditional medication by other medications and feeling sadness about family members when they are sick (11). Apart from this, patients who have phobia of dental professionals move towards the practice of self-medication (12). Many patients do not know that routine dental care is available and tend to move towards inappropriate management of dental problems (13).

In the recent years, due to high availability of information via internet and websites, people can gather adequate data from different resources. When sick, they try to obtain information about self-medication through medical dealers, neighbourhood, relatives and mass media (9). A study revealed that various drugs and substances including antibiotics, analgesics and unorthodox agents such as petrol, alcohol, auto-battery acid and urine were inappropriately used before visit or reference to a hospital or dentist (13). For oral disease management, medicinal plants are used commonly in many regions

(14) including African countries such as Equatorial Guinea (15), Madagascar (16) and other parts of the world for instance Nepal (17), Guatemala (18) and Palestine (14).

Self-medication decreases the frequent hospital visits, reduces the cost and increases autonomy. Moreover, it may be the only option they have in their residential areas in some countries where there are poor health care settings (5). However, self-medication have reported adverse impacts such as medicine may be contraindicated to disease, drug resistance, adverse effects, taking expired tablets, taking overdoses, poor self-diagnosis and addiction to drugs (7). Self-medication may also lead to missed or delayed diagnosis by professionals (19). These complications include oro-dental or systemic diseases such as liver failure or complications in the upper part of the gastrointestinal system (19). Argentine pharmaceutical confederation conducted a survey and found that 82% of population in their study used self-medication and were not aware of the side effects of drugs, that they can cause chronic kidney failure (11%) and digestive haemorrhage (40%) (6). In this context, rules and regulations related to prescription should be controlled to reduce the self-medication and health promotion programs should be conducted at the society levels to reduce self-medication.

The study is important as it is targeted at seeking information related to self-medication and identifying the factors which trigger the patient to have self-medication for dental problems. Through this study, the health care professionals and related regulatory authorities will be able to educate the patients about side effects of self-medication and the importance of consulting physicians. Being a multi-cultural country, this study is important in Sri Lanka, as we have multiple traditional medicines like Siddha, Ayur Veda and Unani. However, people do not have proper knowledge about traditional medicine or western medicine but try to utilize both two types of self-medications and they might end up with side effects and severe impairments. The outcome would further help the patients from the harmful side effects of self-medication and help to seek proper medical advice and get correct and early diagnosis. The objective of the study was to assess the prevalence and associated factors of self-medication among dental patients.

Methods

A cross-sectional study was conducted in the Dental Teaching Hospital Peradeniya during December 2024 - January 2025. Based on the records, the number of patients attending this hospital annually was approximately 50,000. Inclusion criteria of the study population were patients above 18 years old attending the dental clinics and outpatient units, while patients who had communication difficulties and psychological concerns were excluded from this study.

Literature reviews indicated that the practice of self-medication in dental care varies between 40% to 70% in different regions in the world. Therefore, the sample size for the study was calculated by assuming a prevalence of 50%, 95% confidence interval ($z=1.96$) with a margin of error of 0.05. the sample was selected using convenience sampling.

A self-administered questionnaire was used to collect the data. It was designed in English, Tamil and Sinhala languages and consisted of three parts with questions regarding sociodemographic and self-medication practices. It was pretested among 20 patients who were not included in the sampling and was modified according to the feedback. All questions were multiple choice questions and were provided according to patients preferred language.

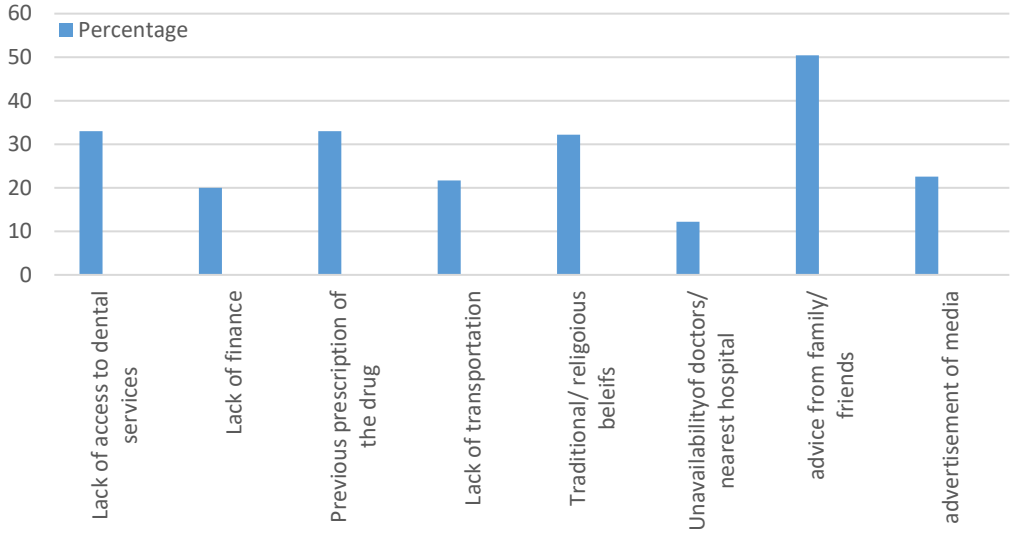
Data analysis

The collected data were analysed using Statistical Package for the Social Sciences (SPSS) version 26. Descriptive statistics were used to analyse the prevalence of self-medication of patients. Chi–squared test was used to determine the association

between sociodemographic data and self-medication. Statistical significance was fixed at $p<0.05$.

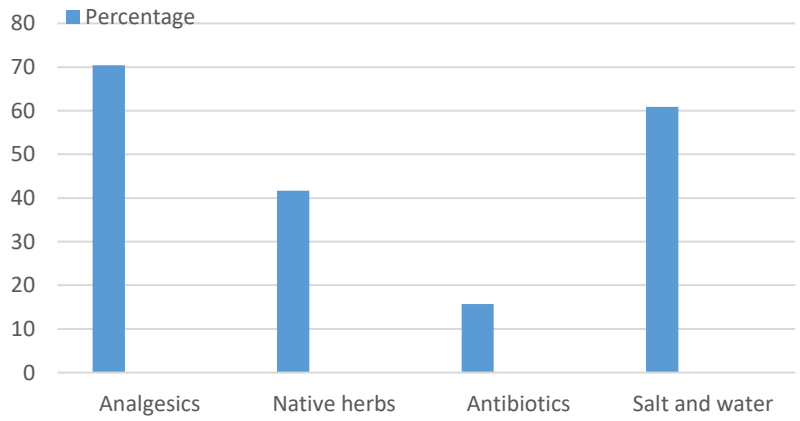
Results

Of the 300 patients who were invited for the study, 196 (65%) completed the questionnaire. Among them, 115 patients had sought self-medication before coming to hospital. This number included 58.2% of the females and 58.9% of the male patients. Within the category of patients who earned less than LKR 30,000 per month, 57.7% used self-medication for dental diseases, while it was 60.3% among patients in the monthly income category of LKR 31,000-50,000 and 58.3% in the category of monthly income more than LKR 50,000. Among the 115 of self-medicated patients, 10.4% (n=12) of patients were from <1 km distance from any type of dental services (state or private sector), while 24.3% (n=28) patients were from 2-3 km and 65.2% (n=75) patients were from more than 3 km distances. Further, 38.3% of patients used self-medication for 2-3 days, 10.2% of patients for one day, 14.3% of patients for 1 week and 11.7% of patients for more than 1 week.



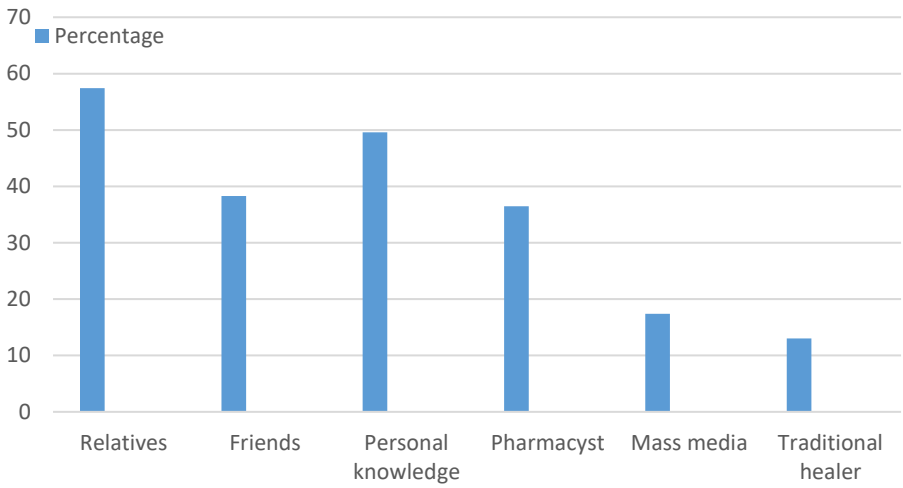
* Multiple choices were allowed as answers

Figure 1: Reasons for self-medication in dental diseases among participants (N=115)



* Multiple choices were allowed as answers

Figure 2: Type of drugs used for self- medication for dental diseases by the participants (N=115)



* Multiple choices were allowed as answers

Figure 3: Source of advice for self-medication by the participants (multiple choices were allowed)

Table 1: Association between sociodemographic characteristics of the participants and the practice of self-medication

Characteristics		No. (%)		χ^2 value	p-value
		Yes	No		
Gender	Male	43 (58.9%)	30 (41.1%)	0.717	0.67
	Female	71 (58.2%)	51 (41.8%)		
Income (LKR)	≤ 30,000	45 (57.7%)	33 (42.3%)	2.448	0.78
	31,000 - 50,000	35 (60.3%)	23 (39.7%)		
	> 50,000	35 (58.3%)	25 (41.7%)		
Education	Primary	5 (62.5%)	3 (37.5%)	3.459	0.63
	Up to GCE O/Level	28 (58.3%)	20 (41.7%)		
	Up to GCE A/Level	47 (59.5%)	32 (40.5%)		
	Diploma	16 (50.0%)	16 (50.0%)		
	Degree	19 (67.9%)	9 (32.1%)		
	Postgraduate	0 (0.0%)	1 (100.0%)		
Age (years)	18-28	38 (62.3%)	23 (37.7%)	2.523	0.77
	29-38	31 (62.0%)	19 (38.0%)		
	39-48	21 (52.5%)	19 (47.5%)		
	49-58	15 (53.6%)	13 (46.4%)		
	59-68	8 (66.7%)	4 (33.3%)		
	More than 68	2 (40.0%)	3 (60.0%)		

Among them, 50.4% stated that they take medication because of advice from family and friends and lack of access to dental services (33.0%), lack of finance (20%), previous prescription of the drug (33%), lack of transportation (21.7%), traditional/religious belief (32.2%) and advertisements on media (22.6%) (Figure 1). Analgesics (70.4%), salt and water (41.7%), native herbs (15.7%) and antibiotics

(15.7%) were the main medication methods used by patients (Figure 2). With regards to sources of information, 57.4% of patients stated that they got advice on self-medication from relatives and 49.6% had found it themselves (Figure 3). Other sources of advice were friends (38.3%), pharmacist (36.5%), mass media (17.4%) and traditional healer (13.0%). Around 71% of patients got drugs for self-medication from pharmacy and 42.6% from family and friends. Other sources of access to drugs were known health care workers (20.9%), hospital pharmacy (13.0%) and traditional medicine shops (22.6%).

None of the sociodemographic characteristics of patients showed significant associations with the practice of self-medication (Table 1). There was also no significant association noted with distance to dental services.

Discussion

The study showed that 58.7% of the patients used self-medication before coming to the hospital for treatment of dental diseases. In the literature, a higher prevalence of self-medication had been observed in Cameroon (67.8%) (7), India (81%) (5) and Argentina (85%). Another study conducted in Saudi Arabia identified that 50.4% of people had self-medication habits. Toothache was the main reason (62.4%) while lack of time (44.6%) was the main triggering factor (20). According to another study in Malaysia, despite 70.2% of the patients knowing the importance of consulting doctors before medication (21). A lower prevalence of self-medication for dental diseases was observed from Nigeria (42%-45.5%) (11, 19) than our study. This can be explained by the fact that countries with free dental services showing a lower prevalence of self-medication.

Fifty-eight-point nine percent of the male participants have had self – medication and 58.2% of females were self – medicated. Participants from both genders had nearly equal prevalence of self-medication. The research study done in Cameroon also showed that equal number of female (67.3%) and male (68.4%) participants had self-medication for dental diseases. The mostly used drug group for self-medication in our study was analgesics (70.4%) and similarly, Cameroon (40.9%) (7), India (5), Nigeria (11) also had analgesics as the mostly used drug. It could be explained by the fact that patients had neglected dental treatment for a long time and seek for emergency relief of pain with use of analgesics.

The common reason for self-medication in our study was advice from family and friends (50.4%), lack of access to dental services (33.0%) and availability of previous drugs (33.0%). In Cameroon, the most common reason for self-medication were lack of time (37.0%) and lack of money (41.5%) (7) and in Nigeria, availability of previous prescription (45%) and lack of time (41.5%) were the most common reasons for self-medication (11). The findings imply that patients from developing countries have multiple barriers in seeking dental treatment and the majority attempt some means of self-medication for dental diseases.

When asked about the future practices on self-medication, 44.9% of the patients responded that they will not do self-medication citing that it is a temporary relief (37.1%), that they are afraid of side effects, that they will not recommend drugs for friends and family members (67.3%) and that it is dangerous (69.9%). Similar to our study, the main source of self-medication in a Nigerian study was pharmacy (60%) (11). However, in India, the most common source was family and friends (30.4%) (5). Comparison of these findings indicate different practices of self-medication by the Sri Lankan patients for dental diseases. It would help us to identify barriers for proper dental treatment practices in the country.

The Dental Teaching Hospital, Peradeniya is the only teaching dental hospital in Sri Lanka. It provides undergraduate and post graduate dental education and accommodates patients from all over the country from urban, rural and estate backgrounds. Therefore,

this study provides representative information on self-medication practices for dental diseases. Also, this study provides insight into how public health care and community professionals can monitor the dental treatment seeking status of patients. The study has several limitations. Firstly, the sample size was relatively small compared to the overall patient population in the country. Additionally, the use of a cross-sectional design, rather than a longitudinal follow-up, presents certain drawbacks. Further, as the study was conducted in a clinical setting, its findings are less generalizable compared to those from a community-based study.

Conclusions & Recommendations

More than half of the patients attending dental treatment units in hospital have resorted to self-medication at some point in their dental disease. There was no significant association noted between patients' age, gender, monthly income and level of education with the practice of self-medication for dental diseases. The general public should be educated on implications of self-medication and should be encouraged on seeking professional advice for dental concerns.

Public Health Implications

- Self-medication for dental diseases was high in the Sri Lankan context, which can lead to increased prevalence of untreated dental diseases in the community.
- Public education and availability of preventive dental care should be emphasized in urban and rural areas in the country.

Author Declarations

Competing interests: The authors declare that they have no competing interests.

Ethics approval and consent to participate: Ethical clearance was granted by the Ethics Review Committee, Faculty of Dental Sciences, University of Peradeniya, Sri Lanka (ERC/FDS/UOP/UG/2024/82). Informed written consent was obtained from each participant prior to data collection.

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Author contributions: TM wrote the initial draft of the research proposal, carried out the data collection and wrote the initial draft of the final manuscript. MJ conceptualized the study, acted as the main supervisor and corrected the draft and wrote the final manuscript. SA prepared the sample calculation, supported in data analysis and did the corrections in final manuscript. All authors agreed on the content of final manuscript.

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