ORIGINAL ARTICLE

Self Medication among Dental Patients Visiting Tertiary Care Hospital, During COVID-19

Numrah Shakeel Malik[1] **BDS**

Muhammad Umair[2] **BDS, MCPS, ACMED**

Iqraa Shakeel Malik[3] **BDS, M.Phil**

OBJECTIVE: The aim of this study was to evaluate trends in self-medication practices among dental patients during the period of lockdown. Self-medication or using drugs without prescription of a doctor is a common practice round the world since a long time. During lockdown due to COVID-19 pandemic all the dental facilities were either closed or were only offering emergency-treatments, therefore lack of services led general population to the practice of self-medication. This should be taken in account for the health and safety of patients.

METHODOLOGY: A quantitative cross-sectional study was conducted among the dental OPD patients visiting a tertiary care hospital post COVID-19 lockdown, from 20th September,2020 to 5th December 2020. Sample size was 451 and study participants were selected by convenient sampling technique.

RESULTS: A total of 389 out of 451 patients self-medicated (383 females and 68 males). Most common reason was tooth ache (56.8%) followed by sensitivity of teeth (37.5%) and dental trauma (3.8%) was the least common reason. Hence, Pain relievers (68.5%) were used by most of the patients followed by antibiotics (35.5%). Prevalence was higher in patients of low socioeconomic status. Most of the patients thought self-medication practice to be acceptable.

CONCLUSION: It was distressing that Self-medication practices among dental patients showed a remarkable increase during period of COVID-19 Pandemic as most of them had practiced self-medication, most commonly for relief from toothache. This issue, being a sensitive one needs to be given required consideration.

KEYWORDS: Self-medication, COVID-19, pandemic, Dental OPD, Pain relievers, Tooth ache.

HOW TO CITE: Malik NS, Umair M, Malik IS. Self Medication among dental patients visiting tertiary care hospital, during COVID-19. J Pak Dent Assoc 2021;31(1):43-48.

DOI: https://doi.org/10.25301/JPDA.311.43

Received: 05 May 2021, Accepted: 02 November 2021

INTRODUCTION

WHO defines self-medication as "the use of drugs to treat self-diagnosed disorders or symptoms, or the intermittent or continued use of a prescribed drug for chronic or recurrent disease or symptoms".[1] Consuming one or more drugs without prescription of the doctor either for treating their symptoms or self-diagnosis is termed as self-medication. Self-medication is a noteworthy concern globally, affecting both developed and developing countries especially economically.[2]

In current times, COVID-19 has been declared as a global public health emergency by World Health Organization.[3] Self-medication practices among dental patients, showed a remarkable increase during period of COVID-19 Pandemic lockdown due to lack of services to general population by dental facilities, due to fear among patients to visit hospitals where the risk of spread of virus is perceived to be high, travel restrictions, COVID SOPs of physical distancing set up by the government of Pakistan in response to this pandemic and spread of misinformation through social media.[4,5,6] Changes among societies in rules regarding access to dental services for elective procedure are seen, as only emergency procedures are being done and many private clinics were shut down during lockdown. According to literature, pandemic is influencing self-medication behaviours among the patients[7] and dangerous side effects and shortage of drugs for the people who actually need them are the consequence of such behaviors.[8]

Even death has been reported from different parts of the world among the people who had self-medicated with medicines that shouldn't have been taken without prescription of a physician.[9] There has been increase in self-medication even among health care professionals during pandemic from

1. House Officer, Department of Oral Medicine and Diagnostic, Foundation University College of Dentistry, Islamabad.
2. HOD and Assistant Professor, Department of Oral Medicine and Diagnostic, Foundation University College of Dentistry, Islamabad.
3. Oral Pathologist, Department of Oral Pathology, AFIP , CMH Rawalpindi.

Corresponding author: "Dr. Numrah Shakeel Malik"

< numrahshakeelmalik@outlook.com >

36.2% to 60.4% in Kenya.[10]

In Poland during the lockdown, 40% of respondents had taken prescription drugs without any medical consultation.[7] In Nepal, 62.6% dental patients self-medicated and toothache was the most common reason (60.8%) for that. (11) In India,78.6% adolescents self-medicated in 2019 before pandemic.[12]

A variety of self-prescribed and Over-The-Counter (OTC) drugs, either alone or in combination with other drugs are being used for recreational purposes.[13] According to study in Tanzania; 58% contributors admitted that they self-medicated and more than 90% of them reported to go to the pharmacy for care when they fall sick instead of going to a physician.[14] According to a research conducted in Islamabad and Rawalpindi commonly known as twin cities of Pakistan, 71.4% self-medicated, painkiller being the most common medication used.[15]

A wide range of researches on the use of drugs without prescription has been done in medical field and before the COVID-19 lockdown but there is dearth of research on dental patients in the period of lockdown due to pandemic. Rationale of this study is to find its prevalence, factors, sources and change in the patterns during the lock down period of COVID-19 among Dental patients, also the correlation between socioeconomic status, education and self-medication visiting a tertiary care hospital; Fauji Foundation Hospital Rawalpindi, Pakistan.

METHODOLOGY

This cross-sectional study was conducted from 20th September,2020 to 5th December 2020 among patients reporting to dental OPD of a tertiary care hospital of Rawalpindi post lock down. All the patients reporting in dental OPD (Out Patients) of all ages were included regardless of their presenting complaint and co-morbidities. Ward patients (In patients) that came for dental consultation were excluded from this study. Prior to the commencement of the study, a written ethical approval under letter no: FF/FUMC/215-39/Phy/20 from the ethical society of Foundation University Medical College Islamabad and informed consent from patients participating in the study was obtained. The setting of this study was Dental OPD (Oral Medicine and diagnostic department) of Fauji Foundation Hospital, Rawalpindi, Pakistan.

Data collection was done via face-to-face interviews using self-structured questioner from patients visiting dental OPD and consenting for the study. Self-structured questionnaire (Cronbach alpha 0.736) was used in this study. The questionnaire was piloted on 49 participants who were excluded from the final study. Self-medication was explained in the beginning of questionnaire. Questionnaire was divided into three sections; first section containing six questions to gather data pertaining to demographic profile of respondents (mentioning names was optional to respect patient's privacy). Second part containing sixteen questions about self-medication, it's reasons and sources leading to self-medication and third part comprised of three questions related to perception regarding self-medication.

Collected Data was entered and analyzed by using Statistical Package Programme for Social Science (SPSS) version 21.0. Data was analysed and summarized using descriptive and inferential statistics, and later presented in tables, percentages, graphs.

RESULTS

Out of 451 patients who participated in the study 185 were of age group 41-60. Among these patients, 86.5% patients self-medicated. (Figure 1) There were 383 (84.9%) females, 68 (15.1%) males who responded to the questioner.

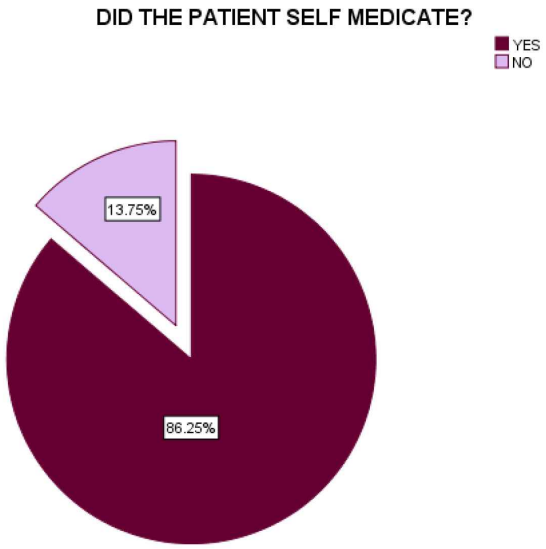

Figure 1

Among the participants 40.1% patients had only primary education, 29.3 % patients had secondary education, 18% patients had attended college, 9.5% patients were undergraduates and only 3.1% did postgraduation. Most of the patients presenting in OPD belonged to middle socio-economic status i.e., 47 %. Among these patients who self-medicated during the period of lockdown females were more as compared to males. (Figure 2) Toothache (56.8%) being the most common reason, followed by sensitivity of teeth (37.5%), gum bleeding (22.2%), tooth mobility (11.3%), mouth ulcers (4.4%) and trauma (3.8%) being the least common reason. (Table 1) Most common medication used

Figure 2

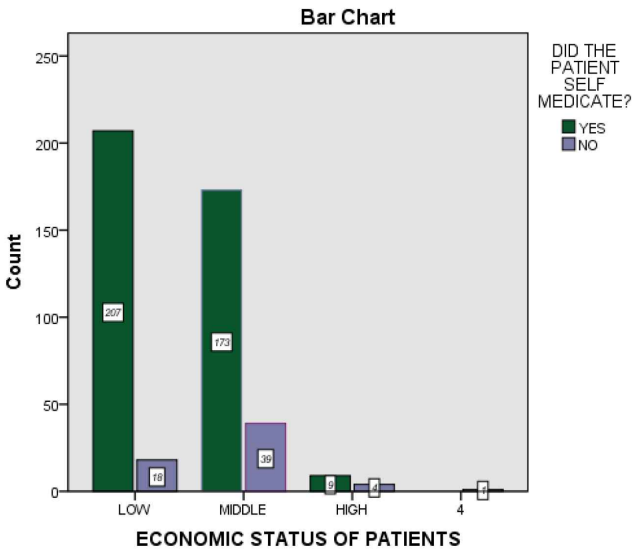

Table 1

	Frequency	Percent %
Toothache	256	56.8
Gum Bleeding	100	22.2
Mouth Ulcer	20	4.4
Sensitivity	169	37.5
Tooth Mobility	51	11.3
Trauma	17	3.8
Total	613	136.0

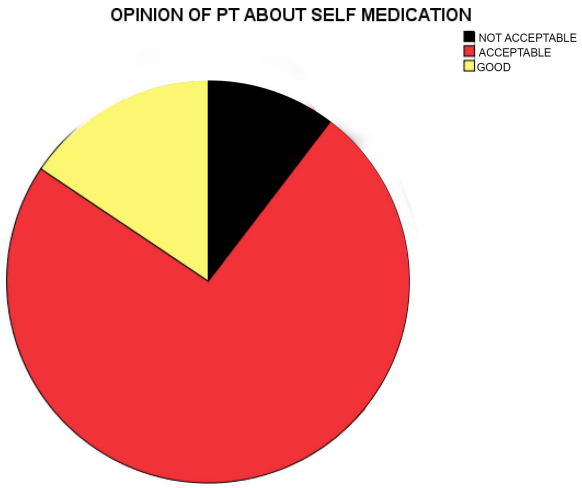

Figure 3

during this period of lockdown without the prescription of any physician were Pain relievers (68.5%) then antibiotics (35.5%), 18.6% didn't even know what type of medication they are taking and few used steroids (6.5%). (Table 2) Tablets (67.4%) were the most common source of medication used by the participant's, Medicated toothpastes were used by 36.4% patients, 35.5% took medication as capsules, 21.7% used gels and 18.8% used medicated mouthwash. Many of the patient's, around 68.5% said that their symptoms were relieved by medication, (Table 3) but a few (6%) encountered adverse reactions from the medication they took and many (18%) were not sure if they encountered any because of the medication they consumed. (Table 4) Most of the patients (74.7%) had a view that self-medication is

Table 2

	Frequency	Percent %
Pain Relievers	309	68.5
Antibiotics	160	35.5
Steroids	31	6.9
Other	84	18.6
Total	584	129.5

Table 3

		DID THE PATIENT SELF MEDICATE?		Total	P value
		YES	NO		
DID THE SYMPTOMS RESOLVE BY MEDICATION?	YES	304	5	309	
	NO	85	57	142	0.001
Total		389	62	451	

Table 4

		DID THE PATIENT SELF MEDICATE?		Total	p-value
		YES	NO		
ADVERSE EFFECTS AFTER TAKING MEDICATION	YES	27	0	27	0.001
	NO	281	62	343	
	MAYBE	81	0	81	
Total		389	62	451	

Table 5

		DID THE PATIENT SELF MEDICATE?		Total	P value
		YES	NO		
ECONOMIC STATUS OF PATIENTS	LOW	207	18	225	0.001
	MIDDLE	173	39	212	
	HIGH	9	4	13	
	4	0	1	1	
Total		389	62	451	

acceptable, only few (10%) think it as unacceptable. Some patients, around 15.3% patients even find it good. (Figure 3) An inverse relation is seen between level of education and self-medication practices. Less educated people mostly with only primary schooling self-medicated the most. Similarly, socio economic status also has inverse relation with this malpractice. More self-medication is done by patients with lower income. (Table 5).

DISCUSSION

This study specifically conducted after lockdown of COVID-19 was lifted by Government of Pakistan to investigate the prevalence of self-medication, the leading factors, sources of self-medication, association of educational and socioeconomic status of patients with self-medication and the perception of general public regarding self-medication. COVID-19 pandemic was declared to be a global health emergency as the disease spread exponentially around the globe.

Coronaviruses characterise a heterogeneous clusters of single-strand large RNA viruses that are widely scattered among mammals and birds. Virus is grouped in a family of Coronaviridae. It spreads through direct or indirect contact.[16] To avoid this spread governments all around the world implemented lockdowns and "stay at home" policies. Self-medication was being practiced before this pandemic as well but has increased remarkably from 71.4% according to a study conducted in similar settings in 2016 i.e before COVID-19 to 86.2% after COVID-19.[15] Prevalence of self-medication is considerably high in all parts of the world. During the lockdown in Poland 40% of respondents had taken prescription medications without any medical consultation.[2] In a study conducted in Nepal 62.6% dental patients practiced self-medication.[11] A similar prevalence of 82% among undergraduate students, who admitted that they had practiced self-medication in a private university in Nigeria was reported.[17] A study conducted in India revealed 78.6 % adolescents practiced self-medication.[12] According to study in Tanzania; 58% contributors acknowledged that they self-medicated and 90% or even more of them admitted that they visit a pharmacy for care if they feel sick rather than going to a doctor/physician.

The results of this study show that females practiced self-medication more as compared to the males which is contrary to study conducted in 2016 at twin cities of Pakistan but similar to a study conducted in Brazil,[17] Nigeria; where among females it was 88.2% and 70.5% in males[11] and a meta-analysis conducted from world wide data also suggests the same.[18] Use of unprescribed drugs is more common in people with low socioeconomic status. Our results are agreeing with the statistics of a study conducted in Sindh, Pakistan which states that the commonest reason behind self-medication remained economic reasons i.e.,88.0%.[19] In a systemic analysis done 2017, the lowest numbers of prevalent cases of oral diseases were observed in high-income countries and the highest prevalence lower-middle-income countries.[20] Hence, self-medication might follow the same trend as it can be a reason for self-medication. Similar findings of another review highlighted prevalence ranging from 81% to 93%, which is considerably high and its association with the gender of participants, education level and their incomes (monthly).[21]

Pain relievers were the most commonly used drugs among dental patients in this study; 68.5% followed by antibiotics 35.5% similar to the results of a study in which analgesics being most common (58%), followed by anti-pyretics and antibiotics were reported among people.[22] Around 1 in 16 older adults participating in an awareness survey in Arizona reported self-medication with non-prescribed antibiotics.[23] Another community-based study held in Jordon shows 40.4% participants used an antibiotic without any prescription in the preceding month.[24]

In 1980s self-medication became popular when WHO (World Health Organization) permitted some prescription medication to be sold without any physician's prescription over the counter to reduce burden upon Health Care Workers. This step was taken for the ease and benefit of health care professionals but misuse of this has proven many unwanted effects; it can lead to many problems including wrong or late diagnosis of disease especially malignant or fatal diseases which get masked, addiction or dependance upon drugs, over/under dosage of drugs and the global rise of Multi-Drug Resistant pathogens, these practices dearth clinical evaluation from a medical/dental professional hence causing enormous adverse effects.[25]

Results of present study show that the most common symptom for which a patient seeks medication is toothache (56.8%) followed by sensitivity of teeth (37.5%) then gum bleeding (22.2%), tooth mobility (11.3%), mouth ulcers (4.4) and least commonly used as medication after trauma (3.8%) which is in agreement with a study in Malaysia showing majority of the participants (79.1%) experienced symptom of toothache during the past one month and 95.6% of the participants took pain relievers for it by themselves.[26]

This study result proves that the most common medication used during the period of lockdown were Pain relievers (68.5%) in form of tablets which is quite higher percentage than a study of Malaysia which reports around more than a quarter i.e.29.4% participants practiced self-medication with pain relievers or analgesics and also in agreement with study of Reema Dograa and Anjana Goyal conducted in India

stating that patients commonly used medication are analgesic anti-inflammatory drugs(paracetamol, diclofenac, aspirin, naproxen and ibuprofen)[27] Antibiotics (35.5%) used in capsule form by dental patients were lesser than pain relievers but not unremarkable and it has increased considerably from 10% calculated in a study of twin cities, Pakistan conducted before COVID-19 and the use of medicated toothpastes increased from 35.8% to 36.4%. It is still lesser than prevalence of self-medication of antibiotics (34%) among dental patients visiting University of Buenos Aires, Argentina,[28] 45% among the university students (non-medical) of Punjab, Pakistan, who used antibiotics without consulting doctor in the past six months[29] and lesser than and 41.9% among patients with Respiratory symptoms presenting to a hospital in Cameroon, Africa.[30] Surprisingly in this study, 18.6% didn't even know what type of medication they are taking and few used steroids (6.5%). According to results of this study, 18% patients were not sure that their drug reactions or adverse effects were due to medication they used and only 6% noted the adverse effects by the drugs they used, which is still higher than percentage of reactions due to self-medication in French hospitals (1.72%).[31] Sadly, most of the patients (74.7% among 451 responders) thought self-medication is acceptable only few (10.%) agreed that it is unacceptable. Around 15.3% patients even find it as a good practice. This perception shows that this malpractice of self-medication needs urgent and firm actions by the policy makers and health care authorities.

CONCLUSION

1) The practice of self-medication is still not given enough consideration, especially in lower to middle income countries like Pakistan.
2) Self-medication practices strongly existed among the dental patient during covid 19 and these practices have shown a remarkable increase during the period of lockdown due to lack of services.
3) However, this generates the need to equip all the patients regarding the harmful effects of self-medication to stop such practices in society at large scale.

RECOMMENDATIONS

There must also be regulation and implementation of laws which limit the sale and purchase of prescription drugs lacking a written validated prescription by a licensed dental practitioner.

During such periods of pandemics an alternative method such as teleconsultations should be setup so that medications be prescribed by a professional health care worker. Furthermore, health care organizations should also execute public awareness programs for spreading awareness regarding self-medication and patient's safety.

CONFLICT OF INTEREST

None to declare

REFERENCES

1. Alghanim SA. Self-medication practice among patients in a public health care system. East Mediterr Health J. 2011;17:409-16. *https://doi.org/10.26719/2011.17.5.409*

2. Noone J, Blanchette CM. The value of self-medication: summary of existing evidence. J Med Econ. 2018;21:201-11. *https://doi.org/10.1080/13696998.2017.1390473*

3. Ward MP, Li X, Tian K. Novel coronavirus 2019, an emerging public health emergency. Transbound Emerg Dis. 2020;67:469-70. *https://doi.org/10.1111/tbed.13509*

4. Blenkinsopp A, Bradley C. Over the Counter Drugs: Patients, society, and the increase in self medication. BMJ. 1996;312(7031):629-32. *https://doi.org/10.1136/bmj.312.7031.629*

5. Malik M, Tahir MJ, Jabbar R, Ahmed A, Hussain R. Self-medication during COVID-19 pandemic: challenges and opportunities. Drugs ther perspect. 2020;3:1-3. *https://doi.org/10.1007/s40267-020-00785-z*

6. Erku DA, Belachew SA, Abrha S, Sinnollareddy M, Thomas J, Steadman KJ, et al. When fear and misinformation go viral: Pharmacists' role in deterring medication misinformation during the 'infodemic' surrounding COVID-19. Res Social Adm Pharm. 2021;17:1954-63. *https://doi.org/10.1016/j.sapharm.2020.04.032*

7. Makowska M, Boguszewki R, Nowakowski M, Podkowinska M. Self-Medication-Related Behaviors and Poland's COVID-19 Lockdown. Int J Environ Res Public Health. 2020;17:8344. *https://doi.org/10.3390/ijerph17228344*

8. Mallhi TH, Khan YH, Alotaibi NH, Alzarea AI, Alanazi AS, Qasim S, et al. Drug repurposing for COVID-19: a potential threat of self-medication and controlling measures. Postgrad Med J. 2020:postgradmedj-2020-138447. *https://doi.org/10.1136/postgradmedj-2020-138447*

9. Alia E, Grant-Kels JM. Does hydroxychloroquine combat COVID-19? A timeline of evidence. J Am Acad Dermatol. 2020;83:e33-e4. *https://doi.org/10.1016/j.jaad.2020.04.031*

10. Onchonga D, Omwoyo J, Nyamamba D. Assessing the prevalence of self-medication among healthcare workers before and during the 2019 SARS-CoV-2 (COVID-19) pandemic in Kenya. Saudi Pharm J. 2020;28:1149-54. *https://doi.org/10.1016/j.jsps.2020.08.003*

11. Bhattarai R, Khanal S, Shrestha S. Prevalence of Self-medication Practices for Oral Health Problems among Dental Patients in a dental college: A Descriptive Cross-sectional Study. JNMA J Nepal Med Assoc. 2020;58(224):209-13.
https://doi.org/10.31729/jnma.4866

12. Mathias EG, D'Souza A, Prabhu S. Self-Medication Practices among the Adolescent Population of South Karnataka, India. J Environ Public Health. 2020;2020:9021819-.
https://doi.org/10.1155/2020/9021819

13. Chiappini S, Schifano F. What about "Pharming"? Issues Regarding the Misuse of Prescription and Over-the-Counter Drugs. Brain Sci. 2020;10:736.
https://doi.org/10.3390/brainsci10100736

14. Horumpende PG, Said SH, Mazuguni FS, Antony ML, Kumburu HH, Sonda TB, et al. Prevalence, determinants and knowledge of antibacterial self-medication: A cross sectional study in North-eastern Tanzania. PLoS One. 2018;13:e0206623-e.
https://doi.org/10.1371/journal.pone.0206623

15. Durrani OK, Malik IS, Khan K, Zahoor S, Khurshid A, Mukhtar H, et al. self medication among dental patients visiting a tertiary care dental hospital. PODJ. 2016;36(4).

16. Galbadage T, Peterson BM, Gunasekera RS. Does COVID-19 Spread Through Droplets Alone? Public Health Front. 2020;8:163-.
https://doi.org/10.3389/fpubh.2020.00163

17. Arrais PS, Fernandes ME, Pizzol TD, Ramos LR, Mengue SS, Luiza VL, et al. Prevalence of self-medication in Brazil and associated factors. Rev Saude Publica. 2016;50(suppl 2):13s.
https://doi.org/10.1590/s1518-8787.2016050006117

18. Behzadifar M, Behzadifar M, Aryankhesal A, Ravaghi H, Baradaran HR, Sajadi HS, et al. Prevalence of self-medication in university students: systematic review and meta-analysis. East Mediterr Health J. 2020;26:846-57.
https://doi.org/10.26719/emhj.20.052

19. Bilal M, Haseeb A, Khan MH, Arshad MH, Ladak AA, Niazi SK, et al. Self-Medication with Antibiotics among People Dwelling in Rural Areas of Sindh. J Clin Diagn Res : JCDR. 2016;10:Oc08-13.
https://doi.org/10.7860/JCDR/2016/18294.7730

20. Jamhour A, El-Kheir A, Salameh P, Hanna PA, Mansour H. Antibiotic knowledge and self-medication practices in a developing country: A cross-sectional study. Am J Infect Control. 2017;45:384-8.
https://doi.org/10.1016/j.ajic.2016.11.026

21. Torres NF, Chibi B, Middleton LE, Solomon VP, Mashamba-Thompson TP. Evidence of factors influencing self-medication with antibiotics in low and middle-income countries: a systematic scoping review. Public health. 2019;168:92-101.
https://doi.org/10.1016/j.puhe.2018.11.018

22. Arora H, Singh A, Pathak RK, Goel S, editors. Extent and pattern of self medication use among adult residents of a jurisdiction in north, IJPSR, 2017; Vol. 8: 2205-2212.

23. Roberts EP, Roberts BS, Burns A, Goodlet KJ, Chapman A, Cyphers R, et al. Prevalence and dental professional awareness of antibiotic self-medication among older adults: Implications for dental education. J Dent Educ. 2020;84:1126-35.
https://doi.org/10.1002/jdd.12239

24. Nusair MB, Al-Azzam S. The prevalence and patterns of self-medication with antibiotics in Jordan: A community-based study. Int J Clin Pract 2021;75:e13665.
https://doi.org/10.1111/ijcp.13665

25. Alghanim S. Self-medication practice among patients in a public health care system. East Mediterr Health J. 2011;17:409-16.
https://doi.org/10.26719/2011.17.5.409

26. Mittal P, Chan OY, Kanneppady SK, Verma RK, Hasan SS. Association between beliefs about medicines and self-medication with analgesics among patients with dental pain. PLoS One. 2018;13:e0201776-e.
https://doi.org/10.1371/journal.pone.0201776

27. Doomra R, Goyal A. NSAIDs and self-medication: A serious concern. J Family Med Prim Care. 2020;9:2183-5.
https://doi.org/10.4103/jfmpc.jfmpc_201_20

28. Stolbizer F, Roscher DF, Andrada MM, Faes L, Arias C, Siragusa C, et al. Self-medication in patients seeking care in a dental emergency service.AOL. 2018;31:117-21.

29. Gillani AH, Ji W, Hussain W, Imran A, Chang J, Yang C, et al. Antibiotic Self-Medication among Non-Medical University Students in Punjab, Pakistan: A Cross-Sectional Survey. Int J Environ Res Public Health. 2017;14:1152.
https://doi.org/10.3390/ijerph14101152

30. Ngu RC, Feteh VF, Kika BT, F EKN, Ayeah CM, Chifor T, et al. Prevalence and Determinants of Antibiotic Self-Medication among Adult Patients with Respiratory Tract Infections in the Mboppi Baptist Hospital, Douala, Cameroon: A Cross-Sectional Study. 2018;6.
https://doi.org/10.3390/diseases6020049

31. Asseray N, Ballereau F, Trombert-Paviot B, Bouget J, Foucher N, Renaud B, et al. Frequency and severity of adverse drug reactions due to self-medication: a cross-sectional multicentre survey in emergency departments. Drug Saf. 2013;36:1159-68.
https://doi.org/10.1007/s40264-013-0114-y