

Self-medication among Medical Students and Staffs of a Tertiary Care Centre during COVID-19 Pandemic: A Descriptive Cross-sectional Study

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ABSTRACT

Introduction: Self-medication is a common practice worldwide. Major problems related to self-medication are wastage of resources, increased resistance of pathogens, adverse reactions, and prolonged suffering. This study aimed to find the prevalence of self-medication among medical students and staffs of a tertiary care centre during the COVID-19 pandemic.

Methods: A descriptive cross-sectional study was conducted among medical students and staffs of a tertiary care centre from 1st November to 30th November, 2021. Ethical clearance was taken from the Institutional Review Committee (Reference number: 2710202102). Convenience sampling was done to reach the sample size. Online questionnaires consisting of information on self-medication and socio-demographic characteristics were used. The data was transferred into an Excel spreadsheet and later was exported to Statistical Package for the Social Sciences version 20 for analysis. Point estimate at 95% confidence interval was calculated along with frequency and proportion for binary data.

Results: Among 383 participants, the prevalence of self-medication during the pandemic was 193 (50.4%) (45.39-55.40 at 95% Confidence Interval). About half of the respondents 90 (50.3%) who self-medicated purchased the medicines directly from the pharmacy. The most consumed medicines were Paracetamol 128 (18.9%), Vitamin C 126 (18.6%), Zinc 86 (12.7%), Multivitamins 75 (11.1%), and Vitamin D 65 (9.6%) followed by Azithromycin 54 (8%), cough syrup 53 (7.8%) and Ibuprofen 46 (6.8%).

Conclusions: The prevalence of self-medication during the COVID-19 pandemic is lower compared to that of other developing countries. Paracetamol and Vitamin C are the most consumed drugs for self-medication and Azithromycin is the most used prescription-only drug for self-medication during the COVID-19 pandemic.

Keywords: COVID-19; Nepal; self-medication.

INTRODUCTION

The World Health Organization defines self-medication as the selection and utilization of medicines to treat self-recognized symptoms or ailments without consulting a physician.¹ Family, friends, neighbours, the pharmacist, previous prescribed drug, or suggestions from an advertisement in newspapers or popular magazines are common sources of self-medication.²

Self-medication is a common practice worldwide.³ During the pandemic, the constant fear of going

outside and using health services may have an impact on the use of self-medication.⁴ At this stage of the pandemic, self-medication is found as a common practice in many countries.⁵ Major problems related to self-medication are wastage of resources, increased resistance of pathogens, and serious health hazards such as adverse reaction and prolonged suffering. Antimicrobial resistance is a current problem

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worldwide particularly in developing countries where antibiotics are available without any prescription.⁶

This study aimed to find the prevalence of self-medication among medical students and staffs of a tertiary care centre of Nepal during the COVID-19 pandemic.

METHODS

This was a descriptive cross-sectional study conducted from 1st November to 30th November, 2021. Ethical approval was taken from Institutional Review Committee (IRC) Kathmandu Medical College Teaching Hospital (Reference No: 2710202102). Consent was attached at the beginning of the Google form, those who agreed could proceed further. Medical students and staffs, affiliated with Kathmandu Medical College Teaching Hospital (KMCTH) were included and the incomplete data forms were excluded. A convenience sampling method was used.

The sample size was calculated by using the formula:

$$n = Z^2 \times (p \times q) / e^2$$

$$= (1.96)^2 \times 0.50 \times (1-0.50) / (0.06)^2$$

$$= 267$$

Where,

n= required sample size

Z= 1.96 at 95% of Confidence Interval (CI)

p= prevalence of self-medication among medical students and staffs of a tertiary care centre taken as 50% for maximum sample size

q= 1-p

e= margin of error, 6%

The minimum sample size calculated was 267. Taking 10% non-response rate, the sample size becomes 294. However, the total sample size taken was 383.

The main instrument to collect data was an online questionnaire. An online questionnaire was prepared using Google forms and was sent to participants through email, social media (Facebook, Instagram, Viber, and Whatsapp). The survey was kept brief to achieve greater response rates. Pretest was conducted among 20 participants for clarity and content prior to dissemination for others. Day-to-day supervision of sent questionnaires was done. Those who did not respond were sent up to three reminders.

The data was transferred into an Excel spreadsheet and later exported to Statistical Package for the Social Sciences version 20 for data analysis. Descriptive statistics were used, and variables were represented in terms of percentages. Point estimate at 95% confidence interval was calculated along with frequency and

proportion for binary data.

RESULTS

Among 383 participants, the prevalence of self-medication during the pandemic was 193 (50.4%) (45.39-55.40 at 95% Confidence Interval). About half of the respondents 90 (50.3%) who self-medicated purchased the medicines directly from the pharmacy. Among the respondents who participated in the survey of which 237 (61.9%) were from the Kathmandu Valley. Among all, 194 (50.7%) were between 18-24 years of age. All the respondents were literate, and 291 (76 %) had attended University. The number of male and female respondents was similar, with females being 194 (50.7%). Majority of the respondents were unmarried 235 (61.4%). Around 196 (51.2%) participants were students whereas 93 (24.3%) were in health-care related careers (Table 1).

Characteristics	n (%)
Age	
18-24	194 (50.7)
25-39	155 (40.5)
40-59	32 (8.3)
60-65	2 (0.5)
Sex	
Female	194 (50.7)
Male	189 (49.3)
Marital status	
Single	235 (61.4)
Married	146 (38.1)
Divorced	2 (0.5)
Residence	
Kathmandu Valley	237 (61.9)
Outside Kathmandu Valley	146 (38.1)
Highest level of education	
High School	78 (20.4)
Diploma	14 (3.6)
University or College	291 (76)
Employment status	
Student	196 (51.2)
Health-care related career	93 (24.3)
Employee	77 (20.1)
Business	17 (4.4)

About 106 (27.7%) respondents reported that they had been or were currently infected with COVID-19. About 58 (15.1%) respondents were suffering from co-morbidities like Hypertension 21 (36.2%), Thyroid issues 24 (41.4%), Diabetes 5 (8.6%) and others 8 (13.8%).

The respondents who practised self-medication were 193 (50.4%). Among them, 84 (21.9%) self-medicated when symptoms of COVID-19 developed. About 90

(50.3%) respondents who self-medicated purchased the medicines directly from the pharmacy (Table 2).

Variable	n (%)
Self-medication	Yes 193 (50.4)
	No 190 (49.6)
When did self-medication start	When confirmed PCR test positive 43 (11.2)
	When symptoms of COVID-19 developed 84 (21.9)
	Without symptom for prevention 66 (17.2)
Source of medicine	Prescription written for family 26 (14.5)
	Advice from friend 41 (22.9)
	Directly requested from pharmacy 90 (50.3)
	Tele-medicine 22 (12.3)

Common symptoms during the pandemic for which the respondents took medications were fever 116 (26.1%), body ache 92 (20.7%), throat pain 76 (17.1%), dry cough 74 (16.6%), loss of smell/taste 68 (15.3%) and diarrhoea 19 (4.3%).

The most consumed medicines were Paracetamol 128 (18.9), Vitamin C 126 (18.6%), Zinc 86 (12.7%), Multivitamins 75 (11.1%) and Vitamin D 65 (9.6%) followed by Azithromycin 54 (8%), cough syrup 53 (7.8%) and Ibuprofen 46 (6.8%) (Table 3).

Medicine	n (%)
Paracetamol	128 (18.9)
Ibuprofen	46 (6.8)
Azithromycin	54 (8)
Chloroquine	2 (0.3)
Vitamin C	126 (18.6)
Vitamin D	65 (9.6)
Zinc	86 (12.7)
Multivitamins	75 (11.1)
Dexamethasone	4 (0.6)
Ivermectin	8 (1.2)
Montelukast	5 (0.7)
Calcium	22 (3.2)
Cough Syrup	53 (7.8)
Other	3 (0.4)

A total of 42 (11%) respondents faced adverse effects from the use of these drugs. Some common adverse effects encountered were headache 21 (26.2%), allergic reactions 16 (20.1%), dizziness 15 (18.8), gastritis 12 (15%), constipation 8 (10%), diarrhoea 5 (6.2%) and fungal infection 3 (3.8%).

DISCUSSION

The magnitude of self-medication during the COVID-19 pandemic in our study was 193 (50.4%). Three studies in Pakistan, Bangladesh, and Togo have reported the prevalence of self-medication during the COVID-19 pandemic to be 53%, 71.40 %, and 34.2% respectively.⁷⁻⁹ The prevalence of self-medication in Pakistan was similar to this study whereas it was much higher in Bangladesh and lower in Togo.

In this study, 17.2% of respondents medicated without any symptoms for prevention. This was consistent with the study in Bangladesh.⁸ The majority in our study, who self-medicated, obtained the medicines directly from a pharmacy. The study in Pakistan mentioned, for the majority, the source of the drug was either a prescription written for a family member or directly from the pharmacy.⁷ Directly from the pharmacy may be a common source of self-medication in countries like Nepal and Pakistan because dispensing of medicines from pharmacies is not strictly regulated in these regions.

The medicines most commonly used in our study were Paracetamol, Vitamin C, and Zinc. Drugs like Ivermectin, Montelukast, Dexamethasone, and Chloroquine were used by 0.2%-1.3% of respondents. Various studies have shown drugs like Ivermectin, Azithromycin, Doxycycline, Hydrochloroquinone as the topmost consumed drugs.^{7,8} While; two studies in Peru and Togo have Acetaminophen (paracetamol) and Vitamin C and as the most consumed medicine for self-medication respectively.^{5,9}

The most used 'prescription-only' drug for self-medication was Azithromycin. Though the use of Azithromycin has increased during the COVID-19 pandemic, routine use of azithromycin for COVID-19 in absence of additional indication is not recommended.^{10,11} Instead, inappropriate use of antibiotics can further lead to increased antimicrobial resistance. Adverse effects were seen using medicines which were also seen in other studies.^{7,12}

The limitation of this study was that the limited sample size and the convenience sampling technique could not make the results representative of the entire population.

CONCLUSIONS

This study concludes that the prevalence of self-medication during the COVID-19 pandemic was lower compared to that of other developing countries. Paracetamol and Vitamin C were the most consumed drugs for self-medication and Azithromycin was the most used prescription-only drug for self-medication during the COVID-19 pandemic.

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Conflict of Interest: None.

REFERENCES

- World Health Organization. Guidelines for the Regulatory Assessment of Medicinal Products for use in Self-medication [Internet]. Geneva (CH): World Health Organization; 2000 [cited 2020 Dec 24]. Available from: https://apps.who.int/iris/bitstream/handle/10665/66154/WHO_EDM_QSM_00.1_eng.pdf. [Full Text]
- Ahmad A, Patel I, Mohanta G, Balkrishnan R. Evaluation of self medication practices in rural area of town sahaswan at northern India. *Ann Med Health Sci Res*. 2014 Jul;4(Suppl 2):S73-8. [PubMed | Full Text | DOI]
- Bennadi D. Self-medication: A current challenge. *J Basic Clin Pharm*. 2013 Dec;5(1):19-23. [PubMed | Full Text | DOI]
- Campos E, Espirito-Santo M, Nascimento T. Self-medication habits during the COVID-19 pandemic. *European Journal of Public Health*. 2021 Aug;31(2). [Full Text | DOI]
- Quispe-Canari JF, Fidel-Rosales E, Manrique D, Mascaro-Zan J, Huaman-Castillon KM, Chamorro-Espinoza SE, et al. Self-medication practices during the COVID-19 pandemic among the adult population in Peru: A cross-sectional survey. *Saudi Pharm J*. 2021 Jan;29(1):1-11. [PubMed | Full Text | DOI]
- Pagan JA, Ross S, Yau J, Polsky D. Self-medication and health insurance coverage in Mexico. *Health Policy*. 2006 Jan;75(2):170-7. [PubMed | Full Text | DOI]
- Azhar H, Tauseef A, Usman T, Azhar Y, Ahmed M, Umer K, et al. Prevalence, Attitude and Knowledge of Self Medication during Covid-19 Disease Pandemic. *Pakistan J. Medical Health Sci*. 2021;15(5):902-5. [Full Text | DOI]
- Nasir M, Chowdhury ASMS, Zahan T. Self-medication during COVID-19 outbreak: a cross sectional online survey in Dhaka city. *Int J Basic Clin Pharmacol*. 2020 Sep;9(9):1325-30. [Full Text | DOI]
- Sadio AJ, Gbeasor-Komlanvi FA, Konu RY, Bakoubayi AW, Tchankoni MK, Bitty-Anderson AM, et al. Assessment of self-medication practices in the context of the COVID-19 outbreak in Togo. *BMC Public Health*. 2021 Jan 6;21(1):58. [PubMed | Full Text | DOI]
- de Lusignan S, Joy M, Sherlock J, Tripathy M, van Hecke O, Gbinigie K, et al. PRINCIPLE trial demonstrates scope for in-pandemic improvement in primary care antibiotic stewardship: a retrospective sentinel network cohort study. *BJGP Open*. 2021 Oct 26;5(5):BJGPO.2021.0087. [PubMed | Full Text | DOI]
- PRINCIPLE Trial Collaborative Group. Azithromycin for community treatment of suspected COVID-19 in people at increased risk of an adverse clinical course in the UK (PRINCIPLE): a randomised, controlled, open-label, adaptive platform trial. *Lancet*. 2021 Mar 20;397(10279):1063-74. [PubMed | Full Text | DOI]
- 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 Oct;28(10):1149-54. [PubMed | Full Text | DOI]

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