

ORIGINAL ARTICLE

A Prospective Survey on Potential Risk and Perception of Self-medication in Post Covid Pandemic Among the Pharmacy Institutes in Chithradurga

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ABSTRACT

During the COVID-19 pandemic, self-medication practices surged due to strained healthcare systems and mobility restrictions thus this study investigates the self-medication patterns of pharmacy students in Chithradurga after the pandemic, examining associated risks and perceptions. A prospective observational study was conducted with 250 pharmacy students from SJM College of Pharmacy, Raghavendra College of Pharmacy, and St. Mary's College of Pharmacy. Data were collected through structured, pre-validated questionnaires for assessing self-medication habits, motivations for self-medication, and attitudes toward the practice. Findings revealed that 98% of participants engaged in self-medication during the pandemic, with 46.93% continuing this behavior post-pandemic. Key reasons for self-medication during COVID-19 included travel restrictions (31.83%) and minor health issues (31.83%). Post-pandemic, 56.52% of students cited the effectiveness of prior medications for similar conditions as a reason for ongoing self-medication. Fever was the most commonly self-treated condition (70.20%), with analgesics and antipyretics being the most frequently used medications (71.42%). The majority of students held a positive perception of self-medication. In conclusion, the high prevalence of self-medication among pharmacy students during and after the COVID-19 pandemic is likely linked to their familiarity with medications. This underscores the importance of educating students about the potential risks associated with self-medication, even among those with pharmaceutical knowledge.

Keywords: self-medication, COVID-19, prevalence, observational study, perception.

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INTRODUCTION

Self-medication is defined as the act of obtaining and using medication to address one's own symptoms without seeking advice from a healthcare professional [1]. It may occur due to a variety of factors, including insufficient time to consult with medical personnel, difficulty scheduling an urgent appointment, relative distance from nearby hospitals and clinics, lack of available slots at hospitals during peak hours, and high consulting costs for physician services [2]. Antimicrobials (azithromycin, amoxicillin), sedatives, hypnotics, non-steroidal anti-inflammatory drugs (paracetamol, ibuprofen), steroids (dexamethasone), vitamin supplements, zinc supplements, anti-parasites (ivermectin), anti-malaria's (hydroxychloroquine, chloroquine), and herbal drugs (sanna makki, tea) are commonly used as self-medication [3]. It is widely practiced because it aids in the prevention and treatment of some minor pathological conditions like headache, fever, sore throat, gastroenteritis, respiratory issues, skin conditions, and ear symptoms at minimum cost.³ The practice of self-medication has risen as a result of advertisements in newspapers, television, and other media. Gender, income, self-care orientation, and medication knowledge are a few personal aspects that may affect how often people self-medicate [4]. However, it is important to note that the practice of self-medication pose many risks, including polypharmacy, improper diagnosis, side effects, drug reactions, antibiotic resistance, drug dependence,

delay in seeking professional advice, incorrect selection of therapy, and taking the wrong doses, route, and time of medication [5]. The COVID-19 pandemic appears to be a recent event that has significantly fueled the public's tendency toward self-medication. The new corona virus known as SARS-CoV-2 is the source of COVID-19, a virus-related respiratory disease. Experts predicted that both the general public and COVID-19-infected and recovered individuals will utilize self-medication at much higher rates after the pandemic. Examining the global search trends for phrases like "self-medication," "self-care," and "self-administration," which demonstrated a commensurate spike in Google searches during the outbreak, may help explain this [6]. A belief that self-medication was a more practical, efficient, safe, and affordable option for treatment spread during the pandemic as a result of the overworked healthcare system, travel restrictions, oxygen shortage, and virus risk. The post-COVID-19 pandemic era has witnessed a surge in self-medication among teenagers and young adults, who have adopted this practice extensively. Consequently, there is a pressing need to comprehensively assess the current landscape of self-medication intake and the various challenges experienced by this demographic under the prevailing circumstances. Moreover, for aspiring health care students, such as future pharmacy professionals, the idea of responsible self-medication could be an effective way to avoid the unwanted consequences of self-medication. However, in order to partially do this, it is necessary to investigate the level of awareness and self-medication practices among pharmacy students. Furthermore, the inclination toward self-medication observed among pharmacy students is indicative of its prevalence within the upcoming generation. Therefore, it is imperative to evaluate their perceptions in this regard.

MATERIAL AND METHODS

This study was a questionnaire-based prospective observational study conducted among students of pharmacy institutes in Chitradurga. (SJM College of Pharmacy, Raghavendra College of Pharmacy, and St Mary's College of Pharmacy) for a period of 6 months (MAY 2023 - OCT 2023). The inclusion criteria for the study were being students of pharmacy institutes in Chitradurga; both male and female genders were included, and the exclusion criteria were the participants who were following the prescription as per physician advice and those who were absent during the study. The study was approved by the institutional ethical committee at Sri Jagadguru Mallikarjuna Murugharajendra College of Pharmacy, Chitradurga. Vide No.: SJMCP/102/2023-24. The current study was a six-month prospective observational study carried out among students of pharmacy institutes in Chitradurga. The study commenced after obtaining approval from the Institutional Ethics Committee (IEC). A validated questionnaire was distributed among the students of pharmacy institutes with the following criteria: The questionnaire contained questions to evaluate the self-medication pattern, associated risk, and perception of self-medication among pharmacy students. Collected data was maintained confidentially.

Development of Questionnaire

A questionnaire was developed for the study. It included three sections; the initial section encompassed inquiries about the demographic details of the participants, like the name, age, gender, course, and name of the college. The subsequent section contained queries aimed at evaluating self-medication patterns, such as determining the prevalence, understanding the reasons behind self-medication, identifying the medical condition for which self-medication was practiced, categorizing the type of drugs used, and exploring the associated risks during and post COVID-19. While the third section comprised, a pre-validated questionnaire sourced from a previous study conducted in Malaysia by Mok *et al.*, [1], to determine the perception of self-medication among pharmacy students. The questionnaire was used with proper authorization from the researcher. It included statements about self-medication, and students were required to choose from options such as agree, strongly agree, neutral, disagree, or strongly disagree. The perception scale used in the study was validated using Cronbach's alpha model and parallel alpha model.

Statistical analysis:

After data collection, the data was entered in an Excel spreadsheet and analyzed using the latest version of IBM SPSS 28 software, in which descriptive statistical analysis was carried out to understand the different variables in the study, and the perception scale used in the study was validated using Cronbach's Alpha model and parallel alpha model.

RESULTS

A questionnaire-based prospective observational study was carried out during the study period (6 months, MAY 2023-OCT 2023) among the students of pharmacy colleges in Chitradurga. The study was conducted

to evaluate their self-medication pattern post- COVID-19 pandemic, assess the risk factors associated, and assess their perception of self-medication. The questionnaire included 3 sections.

Sociodemographic characteristics

In the current study, among 250 participants, the range of age was from 18 to 29 years of age. The majority were from 21-23 (53.2%) years of age; 151 (60.4%) were female, followed by 99 (39.6%) male. Out of 250 respondents, 214 (85.6%) were B.Pharm students, and the rest 36 (13.4%) were M. Pharm students; 151 (60.4%) were from SJM College of Pharmacy, 68 (27.2%) from Raghavendra College of Pharmacy, and 31 (12.4%) from St. Mary's College of Pharmacy. (table 1)

Self-medication pattern

The self-medication pattern of students in the present study was assessed, and it was revealed all 250 participants were familiar with the term self-medication, and 239 (95.6%) were aware of the WHO definition of self-medication. Among 250 participants, 245 (98%) were practicing self-medication during COVID-19; the majority, 78 (31.83%), were engaged in the practice of self-medication during COVID-19 due to restrictions on travel and for minor health problems. About 4 (1.6%) respondents, which was the lowest response given, were not sure about the reason for which they self-medicated. Out of the 245 participants, 115 (46.93%) were still practicing self-medication post- COVID-19, which they were familiar with from the COVID-19 period. More than half, 65 (56.52%) were engaged in the practice of self-medication post-COVID-19 as they felt they got cured with the medication they had used before, and a small Percentage of respondents 2 (1.6%) was still practicing because of embarrassment to consult a doctor for their medical condition. In 245 participants, the majority was self-medicating for fever 172 (70.20%), while the least was reported for depression 5 (2.05%) (figure 1). Analgesics/antipyretics 175 (71.42%) were the most frequently used class of drug among the 245 individuals, with antidepressants 5 (2.04%), the least frequently used. Here the respondents have given multiple answers for the question. Of the 245 individuals, 82 (33.46%) reported having no adverse effects, although 163 (66.5%) reported to have experienced some sort of adverse effect (figure 1). After noticing any form of side effects from the drug, more than half of the respondents, 126 (77.3%), decided not to continue the practice. (table 2)

Perception of self-medication

As scoring is provided for all the perception questions, The reliability of the questionnaire was checked. As per the reliability scale, values between 0.5 and 0.6 are poorly reliable. Those between 0.6 and 0.7 are of questionable reliability. Values lying between 0.7-0.8 are of acceptable reliability, and 0.8-0.9 show good reliability. The validity of the perception scale used in this study was assessed using Cronbach's Alpha model and the parallel model. The value thus obtained was 0.734, which falls under the range of acceptable reliability. The majority of the respondents gave answers that favored self-medication. (table 3)

DISCUSSION

Our study revealed a high prevalence of self-medication during the COVID-19 pandemic, with around 98% of participants practicing it. However, in the post- pandemic period, there has been a notable decline in self-medication, with only 46.93% of individuals continuing this practice. These results were consistent with a prior study by Rafiq K *et al.*, 2022, which was carried out in Pakistan. Based on the study's findings, 754 adults (n = 508) adopted self-medication at a rate of 67.3%, while 166 teenagers (n = 78) supported the practice at a rate of 46.9%. The estimated outcomes revealed a strong association (0.000, P < 0.05) between the adoption of self-medication and the pandemic scenario.² Makowska M *et al.*'s study from Poland, 2020, is also comparable to ours and confirms our conclusions. Nearly half of the respondents (45.6%) experienced at least one activity linked to inappropriate self- medication during the COVID-19 lockdown, according to the results, and several of these individuals had never engaged in such behaviors before the lockdown [7]. This can be considered an indication that self-medication may have gained a newfound popularity during the pandemic and the need to conduct further studies in this domain. Our results also demonstrate that travel restrictions imposed during the pandemic (31.83%) and the perception of minor health issues (31.83%) were key factors that motivated individuals to turn to self-medication during the pandemic. When examined why some found it convenient to continue the practice of self-medication even after the pandemic, it was found that a significant (56.52%) of individuals felt that their previous medications were effective for similar conditions. The most common health conditions for which the participants self-medicated were fever (70.20%), cold (69.38%), pain (30.20%), cough (4.08%), and depression (2.05%). diarrhea (5.30%) others (vomiting) (4.08%), with analgesics/antipyretics (71.42%) being the most commonly used class of drug. These results were consistent with a prior investigation conducted by Yasmin F *et al.* in 2022. Based on the study results, Paracetamol (65.2%) and multivitamins (56.0%) were the most often used drugs. The reported rationales

for using these drugs were COVID-19 prevention or treating the common cold or flu. The findings of the study demonstrate that these behaviors were typical among medical students since they had access to and relevant prior knowledge about drugs [8]. About 66.5% of the respondents in our study reported to have experienced some sort of side effects, such as dizziness (11.42%), GI disturbance (10.20%), nausea/vomiting (12.65%), loss of appetite (16.32%), allergic reaction (12.65%), constipation (4.08%), diarrhea (6.12%), and weakness (2.85%) to the drugs they were self-medicating, while a few (33.46%) of them didn't experience any potential side effects. In terms of perception, pharmacy students exhibited a positive view favoring self-medication in response to most questionnaire questions. This inclination may be attributed to their background in pharmacy, comprehensive drug knowledge, and ready access to medications. However, certain questions revealed concerning trends, such as willingness to self-medicate based on online information or only seeking medical help if their chronic condition worsened. These findings emphasize the need for increased awareness among young individuals to ensure safe self-medication practices. According to a prior study by Seam *et al.* (2018), a sizable (p 0.05) percentage of the students (51% male and 43% female) believed it to be a reasonable practice since they considered self-medication to be a part of self-care [9]. Moreover, akin to other studies in the field, we've observed a surge in self-medication practices in the wake of the COVID-19 pandemic. Although our research indicates a notable reduction in self-medication practices compared to the pandemic period the issue remains worrisome. This underscores the ongoing importance of raising awareness and educating the general public about the potential risks associated with self-medication.

Table 1: Demographic detail of the study participants

Variables		Frequency	Percentage (%)
Age group (years)	18-20	91	36.4
	21-23	133	53.2
	24-26	23	9.2
	27-29	3	1.2
Gender	Male	99	39.6
	Female	151	60.4
Course distribution	B Pharm	214	85.6
	M Pharm	36	13.4
College	SJM college of pharmacy Ragavendra	151	60.4
	college of pharmacy	68	27.2
	St Mary's college of pharmacy		
		31	12.4

Table 2: Self-medication pattern

Questions	Frequency	Percentage (%)
Are you familiar with the term self-medication?		
Yes	250	100
No	0	0
WHO defines Self Medication as "the act of selection and use of medicines by the individuals or member of the individual family to treat self-recognized, self-diagnose conditions and symptoms"		
Agree	239	95.6
Disagree	11	4.4
Have you ever been involved in self-medication practice during COVID-19?		
Yes	245	98
No	5	2
Why did you prefer self-medication during COVID-19?		
Unavailability of doctors	27	11.02
Restriction on travel	78	31.83
Scared of health care worker	49	20.0
Economic condition	9	3.67
Minor health problems	78	31.83
Not sure	4	1.6
Are you still continuing the practice, which you are familiar from COVID-19 pandemic?		
Yes	115	46.93
No	130	53.06

If yes, why?		
Lack of money	6	5
Lack of time	3	2.5
I get cured with the medication	65	56.52
Familiar with the condition	39	33
Embarrassment	2	1.6
What are the drugs that you use to self-medicate? *		
Antibiotics	43	17.5
Anti-histamines	107	43.67
Analgesics/Antipyretics	175	71.42
Nasal Decongestants	27	11.02
Anti-diarrheal	13	5.30
Antidepressants	5	2.04
PPI	40	16.32
Antiemetic	26	10.6
Are you still continuing the same medicine even after understanding the risk associated with it?		
Yes	37	22.7
No	126	77.3

* Multiple answers were acceptable

Table 3: Perception of self-medication

Sl. No	Perception question	Strongly disagree	disagree	Neutral	Agree	Strongly agree
1	I feel that self-medication is effective	3	16	79	133	19
2	I feel that self-medication is safe.	8	49	92	86	15
3	I feel that self-medication exposes me to higher risk of side effects	8	105	62	62	13
4	I feel that self-medication gives me more control over my health	13	14	95	89	9
5	I feel that self-medication is convenient	3	32	63	134	18
6	I feel that consulting a health care professional will resolve my symptoms quicker	4	15	43	117	71
7	I feel that self-medication is more expensive than consulting a healthcare professional	46	123	24	40	17
8	I prefer to consult a healthcare professional compared to self-medication	8	26	50	112	54
9	I will self-medicate if I have experienced the same symptoms before	8	49	54	112	27
10	I will self-medicate if my family or friends have experienced similar symptoms before	8	72	64	95	10
11	I will self-medicate if I can find information on my condition online	25	68	54	88	15
12	I know what medicines to take if I suffer from any minor ailments	12	28	45	136	29
13	I know what medicines to take to control my chronic condition	40	97	52	49	12
14	I will self-medicate if I have used the medicines before	10	36	59	125	20
15	I will self-medicate if my family or friends have used the medicines before	22	61	65	90	12
16	I will self-medicate even if my symptoms are severe	76	0	134	36	4
17	I will self-medicate if my chronic condition is under control	38	83	64	58	7
18	I will consult a pharmacist only if self-medication doesn't cure my minor ailments	12	56	37	115	30
19	I will visit a doctor only if self-medication doesn't cure my minor ailment	3	25	30	134	58
20	I will visit a doctor only if my chronic condition is not controlled with self-medication	9	65	24	92	60

*note: the questionnaire was used with proper approval from the researcher

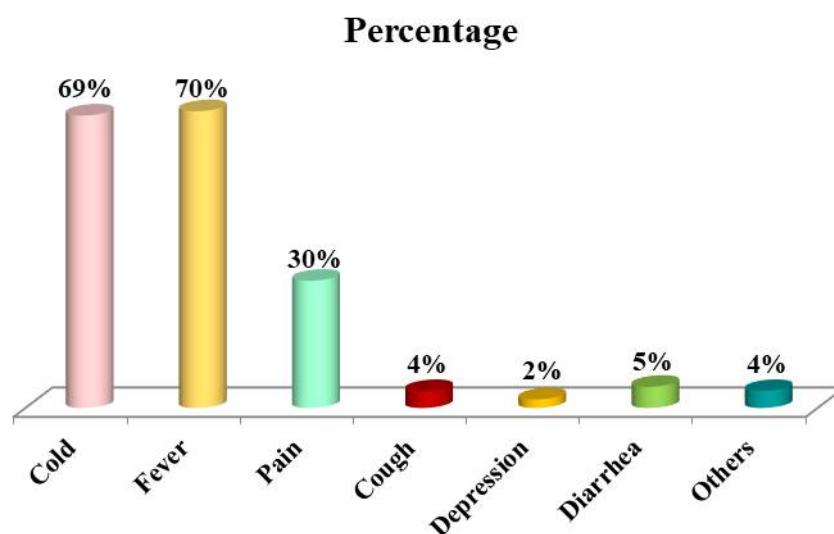


Figure 1: Medical Conditions for Which Self Medication Was Practiced during and Post Covid -19

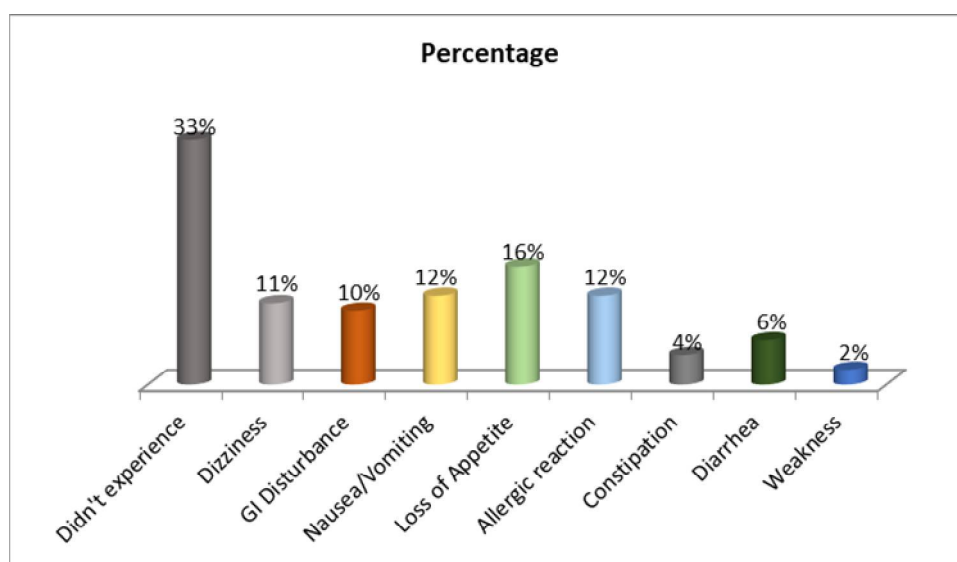


Figure2: Adverse Effects Experienced After Self Medication During and Post Covid -19

CONCLUSION

The study found a remarkably high prevalence of self-medication during the COVID-19 pandemic, with 98% of participants engaging in this practice. Moreover, about 46.93% of the respondents continued self-medication even after the pandemic ended. Additionally, a significant majority of the respondents maintained a positive outlook regarding self-medication. This widespread adoption of self-medication could be attributed to the fact that the survey participants were students from pharmacy colleges who possessed a deep knowledge of medications. It's worth noting that the COVID-19 pandemic led many people to consider self-medication as a convenient alternative to visiting a doctor, and this perception likely influenced our results, especially given that the study focused on pharmacy students rather than the general public.

REFERENCES

1. Mok C Z, Sellappans R, Ee Loo JS. (2021): The prevalence and perception of self- medication among adults in the Klang Valley, Malaysia. *International Journal of Pharmacy Practice*. 1;29(1):29-36.
2. Rafik K, Shagufta N, Anser H, Leghari QUA, Hassan A. (2021): Self-medication in the COVID 19 pandemic: Survival of the fittest. *Disaster Med Public Health Prep*;16: 2534-2538.
3. Nasir M, Salauddin ASM, Zahan T. (2020): Self-medication during COVID 19 outbreak: a cross sectional online survey in Dhaka city, *Int J Basic Clin Pharmacol*; 9(9):1-6.
4. Azhar H, Tauseef A, Usman T, Azhar Y. (2021): prevalence, Attitude and knowledge of self-medication during

- COVID 19 Disease pandemic. P J M H S; y;15(5):902-905.
5. Malik m, jahin m J, Jabbar R, Ahmed A, Hussain R. (2020): Self-medication during COVID 19 pandemic challenges and opportunities. *Drug and Therapy Perspectives*; 36:565-567.
 6. Onchonga D. (2020): A Google Trends study on the interest in self-medication during the 2019 novel coronavirus (COVID-19) disease pandemic. *Saudi Pharmaceutical Journal: SPJ*. Jul;28(7):903.
 7. Makowska M, Boguszewski R, Nowakowski M, Podkowińska M. (2020): Self- medication-related behaviors and Poland's COVID-19 lockdown. *International journal of environmental research and public health*.;17(22):8344.
 8. Yasmin F, Asghar MS, Naeem U, Najeeb H, Nauman H, Ahsan MN, Khattak AK. (2022): Self-medication practices in medical students during the COVID-19 pandemic: a cross-sectional analysis. *Frontiers in public health*. 9;89-98
 9. Seam MO, Bhatta R, Saha BL, Das A, Hossain MM, Uddin SN, Karmakar P, Choudhuri MS, Sattar MM. (2018): Assessing the perceptions and practice of self- medication among Bangladeshi undergraduate pharmacy students. *Pharmacy*. 15;6(1):6.

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