Research Article

Perception and Practice of Self-Medication and Over the Counter (OTC) Drugs among Nursing students, Paramedical Staff and patients in Government Teaching General Hospital

Sowmya Kaniganti[1*], Prasad Reddy. BR[2], Konda. N.V.S.R.P.L. Sailaja[3], M.V.K. Sravani[4], Md. Zulekha[5], N. Tejaswi[6], M.S. Raju[7]

[1*]Assistant Professor, Department of Pharmacology, Dr. Yellapragada Subbarao Government Medical College, Eluru.

[2]Assistant Professor, Department of Psychiatry, Dr. Yellapragada Subbarao Government Medical College, Eluru.

[3]Associate Professor, Department of Pharmacology, Dr. Yellapragada Subbarao Government Medical College, Eluru.

[4,5,6]V/VI Pharm D student, Sir C.R. Reddy College of Pharmaceutical Sciences, Eluru.

[7]ADME Superintendent, Dr. Yellapragada Subbarao Government Teaching General Hospital, Eluru.

Corresponding Author: Sowmya Kaniganti
Assistant Professor, Department of Pharmacology, Dr. Yellapragada Subbarao Government Medical College, Eluru.
Email: [1*]sowmya.kaniganti@gmail.com
Received: 20.01.26, Revised: 22.02.26, Accepted: 25.03.26

ABSTRACT
Background: Self-medication is a significant global public health concern, particularly in India, where it contributes to antimicrobial resistance and potential economic loss due to delayed professional diagnosis. This study aimed to assess the perceptions and practices regarding self-medication and over the counter (OTC) drugs among nursing students, paramedical staff, and patients at a Government Teaching General Hospital.
Methods: An analytical cross-sectional observational study was conducted over six months in Eluru district. A total of 399 participants (170 nursing students, 29 paramedical staff, and 200 patients) were selected via convenient sampling. Data were collected through interviews using a pre-validated questionnaire covering socio-demographic details and Knowledge, Attitudes, and Practices (KAP) regarding OTC use.
Results: High self-medication prevalence was observed, with 87.7% of participants reporting the practice. While 77.2% knew the definition of responsible self-medication, significant gaps existed regarding storage (24.3% correct) and the necessity of completing a drug regimen (33.8% correct). OTC drugs were most frequently used for fever (76.7%), pain (72.1%), and the common cold (71.7%). Notably, 43.6% reported using expired drugs, and only 20.3% of those experiencing adverse reactions reported them to a pharmacist.
Conclusions: OTC drugs play a significant role in self-care and can reduce the burden on healthcare systems when used appropriately, the findings suggest gaps in rational use, awareness of risks, and adherence to safe practices. There is a clear need for structured educational interventions, stricter regulatory policies, and improved access to healthcare services to promote responsible self-medication.

Keywords: Over-the-Counter Drugs, Self-Medication, Perceptions, Practices, Nursing Students, Paramedical Staff, Patients.

INTRODUCTION

Self-medication is an important public health problem, with varied prevalence across the world. The high prevalence of self-medication in India is one of the important factors contributing to the development of antimicrobial resistance.[1]

Various studies reported that self-medication may lead to delay in care seeking which results in paradoxical economic loss due to delay in the diagnosis of underlying conditions and appropriate treatment.[2] unsupervised use of these drugs poses serious risks—like misdiagnosis, side effects, and antimicrobial

resistance, particularly when antibiotics are involved.[3]

Self-medication practices cannot be considered as entirely harmful. Drugs classified as "over the counter" can be purchased without prescription and many a times might save time and money for the consumers. In majority of the hill, tribal regions, and other hard to reach areas where there is a huge shortage of human health work force, patients are still dependent on self-medication practices for minor symptoms.[4]

(OTC) medicines are typically safe. However, there is evidence that OTC medicines can sometimes cause harm because of their misuse, abuse and dependence .Recent reports from the Medicines and Healthcare products Regulatory Agency, individuals who are trying to lose weight, bought slimming products and that a large number of them (63%) reported suffering from unpleasant side effects.[5] According to world health organisation self-medication is defined as use of medications to address self-diagnosed diseases or symptoms.[6] The most commonly used OTC drugs are NSAIDS, antipyretics, antihistamines, cough suppressants vitamin B, C, D, Zinc, however more dangerous drugs like steroids, chloroquine and antimicrobials were also abused.[7]

Due to lax regulations and easy access, misuse is common especially in urban settlements. To address this, KAP (Knowledge, Attitudes, and Practices) studies are vital for understanding public awareness and behaviours related to OTC use. This research helps shape more effective health policies and education campaigns especially in cities, where dependence on OTC medications is growing.[8,9,10,11]

Research Question: What is the level of knowledge, attitude, and practice regarding self-medication and over-the-counter drug use among Nursing students, Paramedical Staff and patients in a Government Teaching General Hospital, and how do demographic factors influence these practices?

Aim: To assess the perception and practice of self-medication and over the counter (OTC) drug use among Nursing students, Paramedical Staff and patients in a Government Teaching General Hospital.

Objectives: **1.** to identify the perception of self-medication among nursing students, Paramedical Staff and patients. **2.** To assess the practice of self-medication. **3.** To identify the perception of over-the-counter drugs. **4.** To assess the practice of over-the-counter drugs.

METHODOLOGY
An analytical cross-sectional observational study was conducted in Government Teaching General Hospital, Eluru district among Nursing students, Paramedical Staff and patients for a period of 6 months.

Selection Criteria:
Inclusion Criteria- Participants above 18 years of age and Population who are willing to participate in the study.
Exclusion Criteria- Individuals unwilling to participate or unable to provide informed consent. Individuals below a certain age under 18 years**.** Participants with cognitive impairments or conditions affecting recall.
A total of 399 study participants were included in the study**.** Participants were selected using convenient sampling within the designated area. One adult respondent per household was interviewed to ensure diversity and avoid duplication.

Method of Data Collection: Interviews with the study participants were conducted. Informed consent was obtained prior to participation. Interviews will be conducted in the local language to ensure comprehension.

Study Tools: A pre structured and pre validated questionnaire was developed based on previous literature and expert validation. It includes sections on socio-demographic details, frequency and types of self-medication, sources of drug information, reasons for self-medication, and awareness of potential risks.

Study Variables:
Independent Variables (Demographic factors): Age, Gender, Marital status, Education level. Occupation (nursing staff, nursing students, paramedical staff), Residential area (rural/urban), Proximity to pharmacy

Dependent Variables:
Knowledge about self-medication and OTC drugs (definition, recommended use, risks, types of drugs, side effects, storage, dosage).

Attitude toward self-medication and OTC drug use (safety perceptions, agreement/disagreement statements).
Practice of self-medication and OTC drug use (frequency, conditions treated, storage habits, checking expiry, reporting adverse effects, consultation behavior).
Perception regarding safety and harm of OTC drugs.

Ethical Considerations: Permission from the Head of the Department and Head of the Institution was obtained. The study was conducted after the approval from the Institutional Ethical Committee (IEC). Confidentiality of the patient will be protected and consent will be obtained using Informed Consent form.

Data Analysis: Collected data was coded and entered into a secure database. Data Entry was done using Microsoft excel 2021 and analysis done using SPSS V 16. Qualitative data was expressed in frequencies and percentages and Quantitative data in mean and standard deviation.

RESULTS

Table 1: Socio-Demographic Variables

Variable		Frequency (N=399)	Percentage
Group	Nursing student	170	42.6
	Paramedical staff	29	7.3
	Patients	200	50.1
Age group	<30 years	280	70.2
	30-39 years	65	16.3
	40-49 years	41	10.3
	50-60 years	13	3.2
Gender	Female	309	77.4
	Male	90	22.6
Residential area	Rural	205	51.4
	Urban	194	48.6
Proximity of residence to pharmacy	Far	32	8
	Not too far	76	19
	Relatively near	163	40.9
	Very near	128	32.1

Table 1 describes the socio-demographic profile of the study participants (n=399). Nearly half of the participants were patients (50.1%), followed by nursing students (42.6%) and paramedical staff (7.3%). The majority were aged <30 years (70.2%) and predominantly female (77.4%). Participants were almost equally distributed between rural (51.4%) and urban (48.6%) areas. Most participants reported living relatively near or very near to a pharmacy.

Table 2: Knowledge toward Responsible Self-Medication-1

Knowledge Questions	Yes No. (%)	No No. (%)	Don't Know No. (%)
Aware about responsible self-medication definition	308 (77.2)	73 (18.3)	18 (4.5)
Basic knowledge about drug action is required for self-medication	293 (73.4)	53 (13.3)	53 (13.3)
Awareness about discontinuation of drugs preferred for self-medication	245 (61.4)	97 (24.3)	57 (14.3)
Aware about reasons to continue or discontinue drugs preferred for self-medication	222 (55.6)	128 (32.1)	49 (12.3)
Drugs should be continued even after symptoms are relieved up to course of regimen	135 (33.8)	239 (59.9)	25 (6.3)
Drugs which are preferred for self-medication do not cause any harm even in higher doses	87 (21.8)	251 (62.9)	61 (15.3)

Drugs taken as self-medication can be stored at any temperature	97 (24.3)	254 (63.7)	48 (12)
Self-medication can be taken at any time of the day (morning/afternoon/night irrespective of food)	85 (21.3)	294 (73.7)	20 (5)
Knowledge about specific side effects of drugs preferred for self-medication "	268 (67.2)	104 (26.1)	27 (6.8)
Knowledge about generic name, trade name, course, and dosage of drugs preferred for self-medication	188 (47.1)	179 (44.9)	32 (8)

Self-Medication			
Knowledge		Frequency (N=399)	Percentage
Self-medication is advised in following age Groups	<18 years	43	10.8
	18-60 years	334	83.7
	>60 years	22	5.5
During self-medication if any unwanted effects appears, what will you do?	Consult Physician	229	57.4
	Discontinue	129	32.3
	Take another medication	38	9.5
	Others	3	0.8

Table 2 presents participants' knowledge regarding responsible self-medication. A majority were aware of the definition (77.2%) and the need for basic drug knowledge (73.4%). However, gaps were observed regarding continuation of drugs after symptom relief, safety at higher doses, storage conditions, and timing of medication. Knowledge about side effects (67.2%) and drug details such as dosage and course (47.1%) was moderate. Knowledge related to appropriate age groups and actions during adverse effects. Most participants (83.7%) believed self-medication is suitable for 18–60 years. In case of adverse effects, 57.4% preferred consulting a physician, while others opted for discontinuation or alternative medications.

Table 3: Attitude toward Responsible Self-Medication

Attitude Questions	Strongly Agree No. (%)	Agree No. (%)	Neutral No. (%)	Disagree No. (%)	Strongly Disagree No. (%)
Self-medication is not safe in all age groups	216 (54.1)	146 (36.6)	23 (5.8)	11 (2.8)	3 (0.8)
All dosage ranges of drugs preferred for self-medication are not safe	163 (40.9)	171 (42.9)	47 (11.8)	16 (4)	2 (0.5)
Self-medication is not advisable for prolonged Period	194 (48.6)	143 (35.8)	38 (9.6)	22 (5.5)	2 (0.5)
Close monitoring of symptoms and possible side effects are required during self-medication	171 (42.9)	187 (46.9)	21 (5.3)	17 (4.3)	3 (0.8)
Self-medication drugs have a tendency to interact with prescription drugs and food	86 (21.6)	172 (43.1)	112 (28)	28 (7)	1 (0.3)
Some of the drugs which are preferred as self-medication are not safe in pregnancy	230 (57.6)	124 (31.1)	25 (6.3)	17 (4.3)	3 (0.8)
Self-medication under professional advice will give better outcomes	169 (42.4)	163 (40.9)	28 (9.6)	27 (6.8)	2 (0.5)

Table 3 illustrates participants' attitudes toward self-medication. A large proportion agreed that self-medication is not safe across all age groups, should not be prolonged, and requires monitoring. Many acknowledged potential drug interactions and risks during pregnancy. Most participants favored self-medication under professional guidance.

Table 4: Practice toward Responsible Self-Medication

Practice Questions	Yes No. (%)	No No. (%)
Do you practice self-medication?	350 (87.7)	49 (12.3)
Have you ever intentionally taken an overdose of any OTC drug?	27 (6.8)	372 (93.2)
Have you ever unintentionally taken an overdose of any OTC drug?	16 (4)	383 (96)
Have you ever experienced an adverse reaction with an OTC drug?	46 (11.5)	353 (88.5)
Did you report this reaction to the pharmacist?	81 (20.3)	318 (79.7)

Table 4 shows self-medication practices among participants. A high proportion (87.7%) reported practicing self-medication. Although intentional and unintentional overdosing were relatively low, adverse drug reactions were reported by 11.5% of participants. Notably, only a small proportion reported such reactions to pharmacists.

Table 5: Awareness Regarding OTC Drugs Usage

Questions	Agree No. (%)	Neutral No. (%)	Disagree No. (%)
OTC drugs are drugs that need to be prescribed by a doctor.	171 (42.9)	151 (37.8)	77 (19.3)
OTC drugs are drugs that can be purchased without a doctor's prescription.	249 (62.4)	79 (19.8)	71 (17.8)
OTC drugs can be recommended by the pharmacist.	254 (63.7)	89 (22.3)	56 (14)
OTC drugs are not affected by storage conditions such as temperature, moisture or light.	92 (23.1)	132 (33.1)	175 (43.9)
OTC drugs do not expire.	28 (7)	39 (9.8)	332 (83.2)
OTC drugs are safe for common ailments	335 (84)	1 (0.3)	63 (15.8)
Prefer OTC drugs over visiting a doctor	223 (55.9)	0 (0)	176 (44.1)
Trust pharmacists to suggest the right OTC medication	344 (86.2)	2 (0.5)	53 (13.3)
Believe repeated OTC use without consultation is safe or Repeated	124 (31.1)	2 (0.5)	273 (68.4)

Table 5 shows that 62.4% of participants correctly identified that OTC drugs can be purchased without prescription, and 63.7% agreed they can be recommended by pharmacists. However, 42.9% incorrectly believed OTC drugs require a doctor's prescription. Misconceptions were evident, with 23.1% believing storage conditions do not affect drugs and 7% thinking OTC drugs do not expire. A majority considered OTC drugs safe for common ailments (84%) and trusted pharmacists (86.2%), while 68.4% disagreed with repeated OTC use without consultation.

Table 6: Practice Patterns of OTC Medication Use

Practice Pattern Questions	Yes No. (%)	No NO. (%)
Do you buy OTC drugs to keep at home in case there is a use for it later in the future?	235 (58.9)	164 (41.1)
Do you check the expiry date of an OTC drug before using it?	375 (93.9)	24 (6.1)
Have you ever taken an expired OTC drug?	174 (43.6)	225 (56.4)
Was it intentional?	34 (8.5)	365 (91.5)
Do you read drug leaflets inserted in drug package before using OTC drugs?	182 (45.6)	217 (54.4)

Table 6 indicates that 58.9% of participants purchased OTC drugs for future use. A high proportion (93.9%) checked expiry dates; however, 43.6% reported using expired drugs, of which 8.5% was intentional. Less than half (45.6%) read drug information leaflets before use, highlighting gaps in safe medication practices.

Table 7: Reasons for Purchasing OTC Drugs

Why Do You Purchase OTC Drugs?	Strongly Agree No. (%)	Agree No. (%)	Neutral No. (%)	Disagree No. (%)	Strongly Disagree No. (%)
I do not like visiting the hospital.	60 (15)	91 (22.8)	124 (31.1)	105 (26.3)	15 (3.8)
Going to the hospital wastes my time.	87 (21.9)	82 (20.6)	84 (21.1)	114 (28.6)	32 (8)
If it's a minor condition, I can take the initiative.	130 (35.1)	196 (49.1)	32 (8)	29 (7.3)	2 (0.5)
If it is a minor condition, the pharmacy is a reliable place to go.	126 (31.6)	189 (47.4)	54 (13.6)	25 (6.3)	5 (1.3)
It is necessary for me to have drugs at home that I can use to treat minor conditions.	117 (29.3)	184 (46.1)	51 (12.8)	25 (6.3)	3 (0.8)
Perception on Safety of OTC Drugs					
All OTC drugs are safe with in the recommended dose	16 (4)	157 (39.)	53 (13.3)	30 (7.5)	3 (0.8)
All OTC drugs are safe above the recommended dose	29 (7.3)	89 (22.3)	89 (22.3)	141 (35.3)	51 (12.8)
All OTC drugs are safe below the recommended dose	28 (7)	103 (25.8)	127 (31.8)	97 (24.3)	43 (10.8)
OTC drugs are harmless regardless of how they are being used	33 (5.1)	99 (24.8)	136 (34.1)	114 (28.6)	17 (4.3)
OTC drugs can cause side effects	104 (26.1)	199 (49.9)	55 (13.8)	34 (8.5)	7 (1.8)
When prescribed, OTC drugs are safe otherwise, they are not	70 (17.6)	128 (32.1)	145 (36.4)	49 (12.3)	7 (1.8)
OTC drugs are safe then prescribed drugs	32 (8)	105 (26.3)	119 (29.8)	116 (29.1)	27 (6.8)
OTC drugs pose NO harm as long as you follow the directions on the drug leaflet	77 (19.3)	137 (34.3)	109 (27.3)	68 (17)	8 (2)
It's okay to share an OTC drug that worked for me with my friends that have similar symptoms	84 (21.1)	131 (32.8)	77 (19.3)	91 (22.8)	16 (4)
I adhere to the pharmacist advice when talking prescription drugs than when taking OTC drugs	129 (32.3)	173 (43.4)	65 (16.3)	29 (7.3)	3 (0.8)

Table 7 reveals that most participants preferred OTC drugs for minor conditions (84.2% agree/strongly agree) and considered pharmacies reliable (79%). About 75.4% felt it necessary to keep medicines at home. Convenience factors such as avoiding hospital visits and saving time showed mixed responses.

Regarding safety, 76% agreed that OTC drugs can cause side effects, while misconceptions persisted, with some participants believing OTC drugs are safe beyond or below recommended doses and that sharing medications is acceptable.

Table 8: Conditions for which Study Participants Purchase OTC Drugs

For What Conditions Do You Purchase OTC Drugs The Most?	Always No. (%)	Often No. (%)	Sometimes No. (%)	Rarely No. (%)	Never No. (%)
Pain	34 (8.5)	64 (16)	190 (47.6)	82 (20.6)	29 (7.3)
Allergy	15 (3.8)	14 (3.5)	89 (22.3)	150 (37.6)	131 (32.8)
Fever	46 (11.5)	83 (20.8)	177 (44.4)	90 (22.6)	3 (0.8)
Abdominal cramps	11 (2.8)	24 (6)	119 (29.8)	116 (29.1)	129 (32.3)
Constipation	10 (2.5)	16 (4)	79 (19.8)	107 (26.8)	187 (46.9)
Headache	35 (8.8)	50 (12.5)	185 (46.4)	101 (25.3)	28 (7.1)
Dermatological problems	11 (2.8)	12 (3)	54 (13.5)	86 (21.6)	236 (59.1)
Urinary Tract Infections	5 (1.3)	7 (1.8)	26 (6.5)	74 (18.5)	286 (71.7)
Cough	22 (5.5)	55 (13.8)	198 (49.6)	91 (22.8)	33 (8.3)
Diarrhoea	9 (2.3)	20 (5)	104 (26.1)	145 (36.3)	121 (30.3)
Common cold	36 (9)	49 (12.3)	201 (50.4)	87 (21.8)	26 (6.5)
Sexually Transmitted Diseases	3 (0.8)	4 (1)	7 (1.8)	17 (4.3)	368 (92.3)
Nausea & Vomiting	8 (2.1)	21 (5.3)	142 (35.6)	151 (37.8)	77 (19.3)
General body supplements	24 (6.1)	23 (5.8)	97 (24.3)	78 (19.5)	177 (44.4)

Table 8 shows that OTC drugs were most commonly used for common conditions such as common cold (71.7% always/often/sometimes), cough (68.9%), fever (76.7%), pain (72.1%), and headache (67.7%). Moderate use was observed for diarrhoea and nausea/vomiting, while use was low for conditions like urinary tract infections (7.8%) and sexually transmitted diseases (3.6%).

DISCUSSION
The present study was conducted to identify the patterns, perceptions, and practices related to over the counter (OTC) drug use among study participants. The findings indicate a high reliance on OTC medications for common ailments, with varying degrees of awareness and responsible usage.

A key finding of this study is the frequent use of OTC drugs for symptom-based conditions, particularly pain, fever, headache, cough, and common cold. Most participants reported using OTC medications "sometimes" or "often" for these conditions, highlighting their role as first-line therapy for minor illnesses. This aligns with previous studies, which have consistently reported fever, headache, and respiratory symptoms as the most common indications for self-medication among students and healthcare-related populations. [12]

The observed pattern may be attributed to the perception that such conditions are self-limiting and do not require professional consultation. Similar findings have been reported in studies from India and other low- and middle-income countries (LMICs), where accessibility, cost-effectiveness, and convenience drive OTC drug utilization.[13]

Another important observation is the gradual decline in OTC drug use for more serious or sensitive conditions, such as urinary tract infections and sexually transmitted diseases, where the majority reported "rarely" or "never" using OTC drugs. This suggests a certain level of awareness among participants regarding the need for professional medical care in more severe conditions. However, the fact that a small proportion still reported OTC use in such conditions raises concerns about inappropriate self-medication practices.

The study also highlights variable attitudes toward OTC drug sharing and adherence to professional advice. A considerable proportion of participants agreed or remained neutral regarding sharing OTC medications with others experiencing similar symptoms. This practice has been reported in earlier studies as well and is considered unsafe due to risks of misdiagnosis, adverse drug reactions, and inappropriate dosing. [13]

Furthermore, although many participants reported adherence to pharmacist advice, a notable proportion showed inconsistent behavior, particularly when using OTC drugs compared to prescription medications. This indicates a perception gap, where OTC drugs are considered inherently safe and used with less caution. Similar trends have been documented in previous research, where individuals demonstrated knowledge of drug names but lacked understanding of dosage and duration. [14]

The findings further emphasize that OTC drug use is largely episodic and symptom-driven, with most participants using medications "sometimes" rather than regularly. This pattern reflects responsible self-medication to some extent; however, it also raises concerns about inconsistent treatment practices, including premature discontinuation once symptoms subside. Prior studies have reported that nearly half of participants stop medications once symptoms disappear, which can contribute to incomplete treatment and potential complications. [14]

An important public health concern emerging from this study is the potential misuse of OTC medications, especially in the context of antibiotics and other non-OTC drugs. Evidence from comparable studies indicates that a substantial proportion of participants incorrectly consider antimicrobials as OTC drugs and use them without prescription, contributing to antimicrobial resistance. [14,15]

Globally, the prevalence of self-medication ranges widely from 32.5% to 81.5%, with higher rates reported among healthcare students due to increased medical knowledge and access to drugs. The findings of the present study are consistent with this trend and reinforce the notion that knowledge alone does not ensure rational drug use. [16,17]

The study also underscores the influence of behavioral and social factors, such as prior experience, convenience, and perceived mildness of illness, on OTC drug use. These determinants have been consistently identified in earlier studies and highlight the need for targeted interventions focusing on behavioral change and awareness. [18,19]

Strengths and Limitations: The study included a heterogeneous group of participants (patients, nursing students, and paramedical staff), providing a broader perspective on OTC drug awareness and practices across different healthcare-related populations. It comprehensively assessed knowledge, attitude, and practice (KAP) along with awareness and behavioral patterns, allowing a multidimensional evaluation of self-medication. The study explored condition-specific OTC drug use and reasons for usage, offering deeper insights into real-world practices. The limitations were being a cross-sectional study, causal relationships between awareness and practices cannot be established. The findings are based on self-reported data, which may be subject to recall bias and social desirability bias. The study was conducted in a single-center setting, which may limit generalizability to other regions or populations. The study did not assess clinical outcomes or appropriateness of specific drugs used, limiting evaluation of rationality of self-medication.

Overall, while OTC drugs play a significant role in self-care and can reduce the burden on healthcare systems when used appropriately, the findings suggest gaps in rational use, awareness of risks, and adherence to safe practices. There is a clear need for structured educational interventions, stricter regulatory policies, and improved access to healthcare services to promote responsible self-medication.

REFERENCES

1. Is self-medication with antibiotics in Europe driven by prescribed use? Grigoryan L, Burgerhof JG, Haaijer-Ruskamp FM, et al. J Antimicrob Chemother. 2007;59:152–156.

2. Hughes CM, McElnay JC, Fleming GF. Benefits and risks of self medication. Drug Saf. 2001;24:1027-37.

3. Carpenter DM, Marley GT, Annis IE, Delamater P, Egan KL. Over-the-counter naloxone availability at North Carolina community pharmacies: A secret shopper study. *Drug Alcohol Depend*. 2025;267:112545.

4. Ganguly NK, Arora NK, Chandy SJ, Fairoze MN, Gill JP, Gupta U, et al. Global antibiotic resistance partnership (GARP): India Working Group. Rationalizing antibiotic use to limit antibiotic resistance in India. Indian J Med Res. 2011;134:281-94.

5. Bowman C, Family H, Agius-Muscat H, Cordina M, Sutton J. Consumer internet purchasing of medicines using a population sample: a mixed methodology approach. Res Social Adm Pharm. 2019.

6. WHO guidelines for the regulatory assessment of medicinal products for use in self-medication: general information. WHO Drug Inf. 14. 1. 2000. 18-26. [Internet]. Available from: https://apps.who.int/iris/handle/10665/57624.Cited Here

7. Yáñez JA, Chung SA, Román BR, Hernández-Yépez PJ, Garcia-Solorzano FO, Del-Aguila-Arcentales S, et al. Prescription, over-the-counter (OTC), herbal, and other treatments and preventive uses for COVID-19. Environmental and Health Management of Novel Coronavirus Disease (COVID-19). 2021:379–416.

8. Ahmed S, Choudhari S, Gaidhane A. Over the Counter: Self-Care or Self-Harm? A MixedMethod Study Protocol on Prevalence and Determinants of Self-Medication Practices inWardha. *Cureus*. 2024;16(7):e65653.

9. Shamsudeen SM, Priya RS, Sujatha G, Muruganandhan J, Manikandan K. Self-medication with antibiotics: A knowledge, attitude, and practice appraisal of 610 dental patients in Chennai, India, from 2016 to 2017. J Educ Health Promot. 2018;7:66.

10. Chigurupati S, Sahoo MK, Bandla N, Dixit H, Tiwari R, Rajput S. Assessment of usage of over the counter (OTC) medications in metro areas: KAP study. J Popul Ther Clin Pharmacol. 2025 Apr;31(4):2369–76.

11. Akande-Sholabi W, Akinyemi OO. Self-medication with over-the-counter drugs among consumers: a cross-sectional survey in a Southwestern State in Nigeria. BMJ Open. 2023;13(5):e072059.

12. Deena Johnsona, Hima S. Sekhara, Teena Alexa, M. Kumaraswamya, Rajveer Singh Chopra. Self-medication practices among medical and paramedical students. Int J Pharm Pharm Sci. 2016;8(7):443–7.

13. Khadka S, Kc R, Luitel A, Thapa Chhetri S, Gurung S, Panta PP, Waiba S. Understanding and practices of over-the-counter drugs for self-care among students of different medical faculties in a low-and middle-income country. Ann Med Surg (Lond). 2025 ;87(5):2615-25.

14. Patel PD, Patel KP, Malhotra SD. Survey of use of over the counter drug and other than over the counter drugs among medical students, nursing and technician staff of a tertiary care teaching hospital. Int J Basic Clin Pharmacol 2017;6:592-6.

15. Hassali MA, Yahaya AH, Shafie AA. Patterns and predictors of non-prescription medicine use. PLoS One. 2013;8(4):e59231.

16. Bradley C, Blenkinsopp A. Over the counter drugs: the future for self-medication. BMJ. 1996;312:835–837.

17. Eticha T, Mesfin K. Self-medication practices in Ethiopia. PLoS One. 2014;9:e97464.

18. Zafar SN, Syed R, Waqar S, Zubairi AJ, Vaqar T, Shaikh M, Yousaf W, Shahid S, Saleem S. Self-medication amongst university students of Karachi: prevalence, knowledge and attitudes. J Pak Med Assoc. 2008;58(4):214-7.

19. Montgomery AJ, Bradley C, Rochfort A, Panagopoulou E. A review of self-medication in physicians and medical students. Occup Med (Lond). 2011;61(7):490-7..