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A CROSS-SECTIONAL STUDY ON THE INFLUENCE OF DEMOGRAPHIC VARIABLES ON THE PREVALENCE AND PATTERNS OF SELF-MEDICATION IN THE GENERAL POPULATION

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Abstract: Self-medication is also referred to as "do-it-yourself medication," in which a person administers medicine to cure themselves either without a prescription or based on a past prescription to treat minor illnesses such as headache, vomiting, cough, fever, etc. Nowadays, self-medication is popular because of the availability of medicine, internet sources, high cost of prescription, and lack of time. Self-medication is very beneficial for treating minor illnesses, but it can also be very dangerous if the wrong drug and incorrect dose are taken. Nonetheless, appropriate self-medication requires that the individual correctly recognize symptoms, set therapeutic objectives, choose the accurate medicine to be used for their medical condition, and calculate the correct dosage and timing of that medication while taking into account their medical history, contraindications, and potential adverse effects. The number of persons who self-treat with over-the-counter medications is yet unknown. In order to better understand customers' attitudes, behaviour, and knowledge about self-medication, the research will examine their use of over-the-counter medications. Developing targeted awareness campaigns and educational programs can help people understand proper medicine use, potential risks, and when to seek professional care. A coordinated approach that merges research, community-based education, and sound policy measures can foster responsible self-medication practices and mitigate associated health risks. The research also aims to examine the patterns and behavior of those who take over-the-counter medications regularly.

Keywords: Self-medication, Drug interactions, Over-the-counter, Adverse Event, Socioeconomic status, Alternative medicines.

INTRODUCTION

The medical sciences place a high value on self-medication. There are advantages for the health care system as well as for the person [1]. The broad definition of self-medication is "drug treatment of self-diagnosed disorders or symptoms." Usage of a prescription medication for symptoms or chronic or recurring illness, either intermittently or continuously"[2,3]. The very acceptable and inexpensive availability of medications has contributed to the rise in SM as a major worldwide public health concern in the last ten years [4,5]. The practice has been continuously growing, according to surveys, and estimates from different researchers

place the number of patients using over-the-counter medications for self-treatment at about 40% [6,7]. Antibiotic resistance, drug-related toxicities, misuse and abuse, polypharmacy, and drug-drug interactions—including a recently documented instance of drug-induced teratogenicity—have all been directly connected to SM [8].

TYPES OF SELF-MEDICATION

Several forms of self-medication are described, and they are based on the drugs and techniques employed:

Over-The-Counter-Drugs

Drugs classified as over-the-counter (OTC) are those

that customers may buy straight from a manufacturer without a legitimate prescription. Due to their widespread recognition as safe and effective when taken at the dosage and instructions specified on the box or patient information leaflet, these drugs are explicitly authorized for self-use. OTC medications are usually designed to address common, minor health conditions, including colds, headaches, mild pain, allergies, or gastrointestinal distress. It is equally crucial to understand that even these seemingly innocuous drugs can become a source of health risks due to abuse, overuse, or ignorance of possible interactions and side effects. For this reason, consumer education and unambiguous labelling continue to be essential elements of safe self-medication practices [9].

Analgesics: Used for pain relief (e.g., ibuprofen, acetaminophen).

Antipyretics: Used to reduce fever (e.g., aspirin, acetaminophen).

Dietary Supplement

Dietary supplements are products that are designed to supplement and improve a person's regular diet by giving them extra nutrients that may be missing or insufficient in their daily food intake. Dietary supplements are designed to provide concentrated versions of certain nutrients and chemicals in order to avoid deficiencies, maintain optimal physiological balance, and, in certain situations, promote specific health advantages. The complex mix of nutrients, and other bioactive substances found in whole meals is not entirely duplicated by supplements. When necessary, seeking the advice of trained medical professionals—such as physicians, dietitians, or nutritionists—is advised to make sure that supplements are customized to meet the needs of each patient, prevent possible drug interactions, and promote general physiological and nutritional well-being [10].

Multivitamins: Used to guarantee proper consumption of vital nutrients.

Omega-3 Fatty Acids: Used to support heart health.

Complementary and Alternative Medicines

According to practitioners of Complementary and Alternative Medicine (CAM), maintaining good health involves much more than only treating an illness's outward symptoms. Complementary and alternative medicine (CAM) practitioners believe that persistent stress, poor or imbalanced diet, unpleasant emotions, and a sense of disconnection or purpose in life can all play a major role in the development of illness. Complementary and alternative medicine (CAM) professionals frequently urge patients to adopt healthy lifestyle choices that enhance general well-being, going beyond only treating symptoms. By addressing a person's physical, mental, emotional, and spiritual needs, CAM practitioners want to assist

people in finding real peace and wellbeing. Since patients are encouraged to take control of their own health, make educated decisions, and develop habits that improve their general quality of life, this all-encompassing treatment promotes a sense of empowerment. As a result, the method supports long-term resilience, personal development, and a persistent state of wellness in addition to helping to alleviate urgent health difficulties. This is consistent with the idea that preserving balance in all facets of life is crucial for optimum health [11,12].

Homeopathy: Treats a variety of ailments by using medications that have been greatly diluted.

Acupuncture: Involves treating various ailments and relieving pain by putting needles into particular bodily locations.

Prescription Drugs

A certified healthcare professional's prescription medications are always accompanied by comprehensive and unambiguous instructions to guarantee their safe and efficient administration. These instructions often address a number of crucial treatment topics that support patients in taking their medications as prescribed and achieving the greatest outcomes. The right dosage is explained by a healthcare professional to avoid underdosing, which might render the therapy ineffective, or overdoing, which could result in negative side effects. Healthcare providers reduce ambiguity, eliminate misunderstanding, and address common misconceptions about medications by giving clear, concise directions. This rigorous approach lessens the risk of self-medication or dependence on incorrect advice, as well as the potential for abuse and inadvertent dosage skipping or doubling. In the end, seeking expert advice guarantees that patients not only profit therapeutically from their medications but also acquire self-assurance, accountability, and a feeling of control over their general health [13].

Antibiotics: Used to treat bacterial infections.

Painkillers: Used for severe pain (e.g., opioids).

REASON FOR SELF-MEDICATION

When people manage their health concerns on their own without seeking medical advice, this is known as self-medication. When choosing a course of therapy, people frequently trust their discretion, prior experiences, or the counsel of friends and relatives. In order to treat minor diseases like headaches, colds, fevers, coughs, or stomach aches, people typically turn to over-the-counter (OTC) pharmaceuticals, prescription treatments, or natural cures. In certain situations, people also employ conventional or DIY remedies, including warm compresses, steam inhalation, and herbal teas. To guarantee safe use, those who self-medicate may try to comprehend and adhere to the medication's dose and instructions [14]. Using over-the-counter medications, old

prescriptions, or conventional treatments to address minor ailments like colds, headaches, or stomach issues gives people the confidence to take charge of their health. This method saves consumers money on travel and lengthy wait periods, making it especially useful in places with few or difficult-to-reach healthcare services. A sense of autonomy and control over one's health is ultimately provided by self-medication, particularly in situations when access to professional treatment is limited by financial or geographic limitations [15,16]

BENEFITS OF SELF-MEDICATION

Self-medication has a number of important benefits for both patients and the healthcare system as a whole when used sensibly and with the right information. Quickly treating minor ailments and symptoms without the need for a doctor's appointment enables people to take control of their health. This lowers the expense of medical visits and treatments, in addition to saving time. It gives individuals the ability to make knowledgeable decisions about their health, especially when it comes to common conditions like headaches, colds, or mild allergies. Generally speaking, appropriate self-medication can lessen the strain on medical facilities by lowering the number of individuals seeking care for minor ailments. Consequently, this enables medical practitioners to concentrate more efficiently on patients with complicated or life-threatening conditions. Additionally, self-medication reduces the burden and stress that physicians and other healthcare workers experience by reducing needless trips to clinics and hospitals. Economically speaking, it helps people save money on medical bills, including consultation fees and travel charges. More generally, when mild diseases are promptly and effectively treated, good self-care can also help people take fewer days off from work or school. All things considered, these benefits demonstrate how appropriate self-medication may promote individual health and the effectiveness of the medical system [17,18].

- Actively participating in their medical treatment by applying the right tools and techniques.
- The economy is particularly affected because fewer and fewer people may seek medical advice.
- Make health care more accessible to those who live in rural or isolated areas.[19].

RISKS IN SELF-MEDICATION

Self-medication might be a simple way to deal with minor health issues, but it's vital to understand that when done improperly, it can offer several major hazards. The risk of a misdiagnosis is among the biggest worries. For instance, symptoms that first appear to be a straightforward headache or indigestion may be early indicators of more serious illnesses that are difficult to diagnose. Instead of seeking medical advice, those who depend simply on

their judgment run the danger of treating the symptoms without addressing the underlying reason. In addition to delaying the proper diagnosis and required treatment, this may also allow the illness to worsen and result in problems that could have been prevented with prompt medical attention. Improper use of pharmaceuticals can have major and occasionally catastrophic implications, especially if one is not fully aware of how they may mix with other medications, medical conditions, or allergies. A large number of self-medicators are ignorant of possible drug interactions, in which two or more prescriptions may reduce their efficacy or raise the possibility of negative side effects. People should at least be aware of the fundamentals of pharmaceutical safety, such as appropriate doses, possible adverse effects, interactions, and when to seek medical advice. Then and only then can self-medication be used properly and responsibly without endangering one's health [20,21].

People may lose out on the chance to receive an early diagnosis of more serious or underlying medical disorders if they just use their discretion and keep treating symptoms that worsen or linger. When illnesses are left untreated, they can worsen and lead to consequences that could have been avoided with prompt medical attention. Furthermore, difficulties brought on by improper self-treatment can eventually necessitate more extensive care, adding to the load on already overburdened healthcare systems. Negligent self-medication not only endangers the individual but also adds to a larger public health issue [22].

- Misjudging one's health
- Failing to recognize specific pharmaceutical risks
- The incapacity to recognize or self-diagnose possible interactions, warnings, precautions, and contraindications
- Inappropriate medicine administration technique
- Medicine-food interactions [23].

PUBLIC HEALTH IMPLICATIONS

Inappropriate self-medication can result in serious public health problems that affect the entire community in addition to the person. When used improperly or excessively, self-administered therapies for minor health issues can have major repercussions, even though they may seem like a quick and easy solution, particularly in situations where access to healthcare is expensive or restricted. Inappropriate self-medication can potentially aggravate a person's health on an individual basis by leading to inappropriate drug usage, negative side effects, delayed access to professional medical treatment, and wrong diagnosis. In a broader sense, widespread abuse leads to more complicated public health issues, including rising medication resistance, particularly

regarding antibiotics, and an increase in avoidable consequences from illnesses that go untreated or are administered incorrectly. Self-medication may therefore be convenient in the short term, but its unchecked usage creates long-term hazards to public and personal health, posing problems that healthcare infrastructures are finding it more and more difficult to handle.

Higher Probability of a Faulty Diagnosis: There are several major health concerns associated with self-medication if appropriate advice from a trained healthcare provider is not sought. The potential use of treatments that are inappropriate for the patient's particular condition is one of the main concerns. Delays and abuse like these can lead to more complicated, expensive, and challenging-to-treat health problems in the long term, in addition to compromising the person's health. Consequently, even while self-medication could seem like a quick and easy fix, it needs to be used carefully and with knowledge of the risks involved [24].

Harmful Drug Effects and Complications: Overuse or abuse of self-medication, particularly when it involves the inappropriate ingestion of over-the-counter (OTC) drugs, can have major and perhaps permanent negative effects on a person's health. A common misconception is that because these medications are readily accessible without a prescription, they are risk-free and unrestricted. Nevertheless, this notion may result in hazardous outcomes if these drugs are used improperly, in excess, or over extended periods without a doctor's care. Acetaminophen, aspirin, and caffeine are examples of typical pain relievers that may appear innocuous at first but can cause major problems such as liver damage, gastrointestinal bleeding, or renal failure if taken excessively. To avoid negative effects, it is crucial to use all medications—including over-the-counter ones—responsibly and intelligently [25-27].

Training and Resource Distribution: A serious flaw in public health education is shown by the pervasiveness of self-medication, which shows that many people are not equipped to make safe and knowledgeable decisions about their health. This disparity highlights how urgently healthcare systems must increase their funding for promoting health literacy among the broader public. A consistent, well-organized educational strategy that not only educates but also gives people the ability to make responsible decisions regarding their medicine usage is necessary to address this problem. We may successfully reach broader demographics by putting in place frequent health awareness campaigns and community-based educational initiatives. Since educated people are more willing to share their information with friends, family, and peers, each attempt to educate one

person has the potential to impact a large number of others. In this manner, a single educational intervention may encourage healthy behaviour across whole communities and increase its impact. In the end, it strengthens public health outcomes by encouraging responsible self-care and reducing pharmaceutical abuse [13].

Social and Economic Aspects in Self-Treatment: Self-medication is a common strategy used by people to avoid the high costs and drawn-out procedures that are frequently connected to conventional medical care. The cost of consultation fees, diagnostic tests, and recommended treatments frequently deters people from getting professional assistance since they may be out of reach for those with low incomes or no health insurance. A large number of people lack sufficient knowledge on the possible dangers of self-treatment or the significance of getting appropriate medical advice. As a result, people could prefer to self-manage their symptoms and undervalue the severity of their illness. Together, these three elements—limited health knowledge, inconvenience, and financial limitations—play a major role in the rising prevalence of self-medication among different demographics [28].

EDUCATIONAL AND INFORMATIONAL NEEDS

The practice of people using medications, cures, or other types of therapy to address health conditions they have discovered on their own without seeking professional medical advice or diagnosis is known as self-medication, and it is becoming more and more common. Convenience, budgetary constraints, or the conviction that the illness is small and treatable without professional assistance are frequently the driving forces behind this behaviour. However, if not used cautiously and sensibly, this strategy may pose major health hazards. The goal of specialized education programs should be to provide the general population with the information they need to recognize when self-care is appropriate and when seeking professional medical advice is essential. We can promote safer self-medication habits and improve public health in general by filling in these knowledge gaps:

Gaining Insight into Self-Medication: The practice of managing health conditions that a person has independently identified by utilizing pharmaceutical medications or other therapies without professional medical supervision is known as self-medication. Self-medication includes both the unsupervised continuation of therapies intended for previously identified disorders as well as the treatment of recently reported symptoms [2,3].

Awareness of potential risk: Self-medication may be extremely harmful to one's health, especially if one is unaware of how to take drugs safely. Adverse side

effects, allergic reactions, or even major health concerns might result from taking the wrong kind of medication, utilizing the wrong quantities, or misinterpreting symptoms. The emergence of bacterial resistance is among the most alarming consequences of inappropriate self-medication, particularly when using antibiotics [29].

Healthcare resources: Healthcare providers may have to spend more time treating the difficulties and side effects that arise from incorrect pharmaceutical usage as a result of the rising practice of self-medication. Drug interactions, allergic reactions, postponed diagnosis, and the exacerbation of untreated illnesses are a few examples of these problems. As a result, time and money that may be utilized to treat other patients—particularly those with urgent or major medical needs—may be taken away to deal with preventable issues brought on by careless self-treatment. A successful tactic is to make readily available information on healthcare services, including local clinics, emergency hotlines, telemedicine platforms, and online consultation tools, widely accessible. By raising knowledge of this issue, healthcare professionals will be better equipped to handle patient care efficiently and effectively, and the hazards of self-treatment will be decreased [13].

In order to address certain medical disorders, people must get a thorough grasp of the many types of pharmaceuticals that are accessible, as well as how each type works within the body. Since using too little medicine might make the therapy ineffective and using too much can cause toxicity or negative side effects, this knowledge should also include knowing the right dosage for each prescription. The possible negative effects that some drugs may have, such as allergic reactions, drug interactions, or other difficulties, should also be known to people. Understanding these factors not only encourages people to take drugs more safely but also gives them the ability to make wise health decisions. Such awareness is particularly critical when it comes to self-medication, where people must be informed and cautious in their approach due to the lack of professional advice [30].

REVIEW OF LITERATURE

Choudhary V. et al. (2024). According to this study, people commonly self-medicate to alleviate mild illnesses. Additionally, this highlights the fact that prior research has indicated that the majority of people worldwide self-medicate. Self-medication must be done appropriately, even while it can relieve symptoms more quickly, lessen the strain on the healthcare system, and be a less expensive option for people without access to professional medical treatment.[31]

Kaushal et al. (2023). draw attention to the fact that

many people self-medicate with common medications including paracetamol, antibiotics, and analgesics, which raises the risk of negative drug responses, drug-drug/food combinations, illness masking, and antibiotic resistance. Their results are in line with past research (Thomas & Sharma, 2021), which demonstrated that self-medication is common among younger, better-educated people because of time constraints and convenience. According to the body of research, self-medication has serious hazards and necessitates stringent regulations as well as public health awareness, even though it offers immediate comfort. [32]

Issa A. et al. (2024). A bibliometric examination of the literature on student self-medication published worldwide during the previous 15 years was employed in this study. With serious worries about the abuse of over-the-counter medications, vitamins, and psychoactive substances, it has been a growing trend in writings on self-medication. Among the main problems noted are limited knowledge, lack of direction, and mental health connections (depression, anxiety). Better education, responsible behaviour, policymaking, and cooperation between academic and medical institutions are all necessary to lower hazards, according to the authors.[33]

Azócar et al. (2023). We out a comprehensive review to examine how medical and biological science students at universities use self-medication. They discovered high prevalence rates, with somewhat higher rates for women than for males. The study emphasized typical justifications for self-medication, such as perceived familiarity with mild illnesses, convenient access to medications at home, and guidance from friends or family. In order to lower the hazards connected with unsupervised self-medication among aspiring health professionals, this study highlights the necessity of increased awareness and education.[34]

Ray et al. (2022). draw attention to the significant dangers of medication resistance, adverse effects, and toxicity that resulted from the improper use of antibiotics, antivirals, vitamins, and untested cures. They found that although self-medication seemed like a quick fix, it actually made public health issues worse. The research emphasizes the necessity of education, laws, and appropriate drug usage in order to avoid long-term health effects.[35]

Akande-Sholabi and Akinyemi (2023) used a cross-sectional survey to evaluate OTC drug self-medication trends in southwest Nigeria. Their results showed that non-prescription medications were widely used for minor illnesses, mostly due to variables including perceived mildness of disease, ease of access, and lack of confidence in official healthcare facilities. In order to guarantee safer self-

medication practices, the study emphasizes the need for improved public knowledge and regulatory rules. It also emphasizes the hazards of abuse, such as improper dosage and possible drug combinations.[36]

Malli et al. (2023) investigated the incidence and contributing variables of self-medication among Saudi Arabian health professional students using a cross-sectional study. They discovered a high proportion of self-medication (55.9%), and that knowledge levels were highly impacted by gender and family wealth. Self-medication was similarly common among students, regardless of demographic differences. The increasing prevalence of juvenile self-medication is highlighted in this study, underscoring the necessity of organized awareness campaigns and regulations to promote safe use.[37]

MATERIAL AND METHODS

Data collection method

To evaluate self-medication habits and associated determinants, an analytical cross-sectional survey was conducted from February to May 2025. In all, 405 individuals from several Indian states, including Haryana, Jammu & Kashmir, Punjab, Himachal Pradesh, and Uttar Pradesh, were involved in the study. In order to guarantee variety in age, employment, and educational background, the participants were chosen using a random sample technique. Because both undergraduate students and working adults made up the study sample, differences in self-medication practices between the academic and working groups could be evaluated. This method made it easier to conduct a thorough examination of the frequency and trends of self-medication as well as the underlying socioeconomic and demographic variables affecting this behavior.

Focus group

Talking in groups provides a valuable and interactive way for people to explore the complex reasons behind self-medication and the impact it can have on individual and community health. Group discussions allow individuals to express their personal experiences, fears, and motivations that influence their decision to take medicines without consulting a doctor. For example, some people may reveal that they choose self-medication because they find it more convenient, affordable, or because they lack trust in local healthcare services. Others may share how advice from family, friends, or social media shapes their choices.[38]. By discussing these openly, participants learn from each other's mistakes and successes, which can lead to more informed and cautious decisions in the future. Overall, group discussions are a powerful tool for health education because they not only share information but also encourage reflection and attitude change. By

collectively examining the 'how' and 'why' behind self-medication, communities can promote more responsible medicine use, reduce potential health risks, and encourage people to seek professional medical advice when needed.[39]

Review of previous study

A systematic review allows researchers to gather and critically organize all the existing information available on self-medication in a structured and transparent way. By collecting and analyzing data from various studies, a systematic review provides a comprehensive overview of what has already been discovered about the topic. This process helps to summarize the current state of knowledge, highlight consistent patterns or trends, and point out any conflicting findings across different studies.[40] The study employed a cross-sectional survey using self-administered questionnaires to gather information on self-medication motivations, health-seeking behaviors, and demographics. Age, academic year, and ease of access to medications were found to be important risk variables. While the study offers valuable insights, its limitations include self-reported responses, recollection bias, and the cross-sectional design's inability to establish causation.[43] Ultimately, systematic reviews strengthen the foundation for future studies by ensuring that new research builds on what is already known, avoids unnecessary duplication, and focuses on the most important unanswered questions.

Research Participants

In this study, data were collected using a semi-structured questionnaire that combined both open-ended and closed-ended questions. This mixed format allowed participants to provide detailed responses while also enabling the collection of standardized information.

The questionnaire was divided into two main sections.

Section A focused on collecting key demographic details, including participants' age, gender, and level of education.

Section B explored the participants' attitudes, beliefs, and actual practices related to self-medication, providing deeper insight into their motivations and behavior.[41]

The questionnaires were personally administered by the researcher to help clarify any doubts and to ensure that the data collection process was thorough and uniform across all respondents.[42]

Questionnaire Design

Information about self-medication habits, the reasons behind them, and related demographic characteristics can be effectively gathered through the use of surveys and structured questionnaires. These tools allow researchers to systematically collect a wide range of

data, including how often people self-medicate, what types of medicines they commonly use, and the factors that motivate them to treat themselves without professional guidance. Surveys and questionnaires provide a practical and cost-effective way to reach large numbers of people, making it possible to capture diverse opinions and experiences. Overall, this approach helps researchers build a clearer understanding of the factors driving self-medication and supports the development of strategies to encourage safer and more informed use of medicines.[40]

Data Analysis

A standardized questionnaire was used to collect data for this study. It was given to participants, and they were asked about their socioeconomic background, self-medication habits, and demographic traits. After being checked for accuracy and completeness using Google Forms, the responses were exported and imported into IBM SPSS Statistics Version 31.0 (2025) for analysis. The individuals' self-medication habits and demographic profile were compiled using descriptive data, such as frequency and percentage.

RESULTS

Knowledge of the demographic sights

Table 1: Study population on the demographic and socioeconomic factors

Parameter		Total respondents	
		n	%
Gender	Female	177	43.8
	Male	227	56.2
Age	18	37	9.2
	18-30	280	69.3
	31-50	79	19.6
	above 50	8	2.0
Employment status	Employed	115	28.5
	Unemployed	93	23.0
	Student	194	48.0
	Retired	2	0.5
Qualification Level	High school	72	17.8
	Bachelor's degree	221	54.7
	Master's degree	67	16.6
	Doctorate	1	0.2
	Diploma	39	9.7
	Other	4	1.0
Type of Education	Health Education	193	47.8
	Non-Health Education	211	52.2

A total of 404 respondents participated, representing diverse demographics. Males (56.2%) slightly outnumbered females (43.8%). Most respondents (69.3%) were aged 18–30, including 9.2% who were exactly 18 years old; only 2% were above 50. Students formed the largest group (48%), followed by employed (28.5%) and unemployed (23%), with 0.5% retired. Over half (54.7%) held a bachelor's degree, while others had master's (16.6%), diploma (9.7%), high school (17.8%), or other/doctoral (1.2%) qualifications. Educational fields were nearly balanced—47.8% health-related and 52.2% non-health-related.

Of the 404 respondents, 75.2% reported self-medicating, while 24.8% had never done so. The main reasons were mild ailments (30.7%) and prior experience (30.7%), followed by lack of time (15.8%), high consultation costs (13.1%), and advice from others (9.7%). When facing a two-day headache, 38.1% would consult a doctor, 32.4% would wait, and others would use OTC drugs (15.1%) or herbal remedies (14.4%). If denied medicine without a prescription, 55.9% would accept it and seek medical help, 24.0% would try another pharmacy, and 20.0% would use home remedies—showing both compliance and a tendency to bypass prescription rules.

Knowledge on Self-Medication Practices and Attitudes

Table 2: Examine population traits and variables associated with self-medication

Parameter		Total respondents	
		n	%
Ever use medication for yourself?	Yes	304	75.2
	No	100	24.8
What is the primary motivation for self-medication?	Lack of time to visit a doctor	64	15.8
	High cost of medical consultation	53	13.1
	Minor illness that doesn't require a doctor	124	30.7
	Previous experience with similar symptoms	124	30.7
	Advice from a family member or friend	39	9.7
How would you respond to a headache that persisted for two days?	Take over-the-counter painkillers	61	15.1
	Wait and see if it improves naturally	131	32.4
	Consult a doctor	154	38.1
	Try alternative treatments like herbal remedies	58	14.4
How would you react if a pharmacist rejected a prescription medication?	Respect their decision and consult a doctor	226	55.9
	Try another pharmacy	97	24.0
	Look for an alternative solution, like home remedies	81	20.0

Decision-making and Awareness for Self-Medication

Table 3: Study population on the decision-making and knowledge of self-medication

Parameter		Total respondents	
		n	%
What would you do if you were using a drug for self-medication and you started experiencing mild allergy symptoms like a rash or itching?	Stop the medication immediately and wait for symptoms to subside	138	34.2
	Continue the medication, assuming the allergy will resolve on its own.	62	15.3
	Consult a doctor for advice on managing the reaction.	185	45.8
	Try an over-the-counter antihistamine to treat the allergy.	19	4.7
You may need to see a doctor for a health concern, but you think the cost of the appointment is high. How would you act?	Option for self-medication to save money.	82	20.3
	Visit a government or community clinic for low-cost healthcare.	175	43.3
	Consult a doctor despite the cost.	129	31.9
	Use online resources to diagnose and treat yourself.	18	4.5
Do you think that over-the-counter medications can effectively cure severe illnesses?	Yes, they are effective for most issues	95	23.5
	Only for minor issues	192	47.5
	No, I would consult a doctor	117	29.0
What are your thoughts on pharmaceutical advertising?	It's helpful and informative	158	39.1
	It encourages irresponsible self-medication	101	25.0
	It's neutral	145	35.9
Do you believe that natural treatments are more secure than prescription medications?	Yes	231	57.2
	No	69	17.1
	May be	104	25.7
How do you make the decision to take a medication?	Based on past prescriptions	173	42.8
	Recommendations from friends or family	67	16.6
	Online research (blogs, forums, or websites)	38	9.4
	Pharmacist's advice	126	31.2
Are you aware of the potential for antibiotic resistance resulting from self-medication with antibiotics?	Yes	230	56.9
	No	77	19.1
	Maybe	97	24.0
Before taking medication on your own, do you review the prescription information?	Yes, rarely	203	50.2
	No, never	75	18.6
	Yes, sometimes	126	31.2
Do you have any chronic illnesses for which you use self-medication? (In this study, an illness is considered	Yes	144	35.6
	No	260	64.4

chronic if it lasts for three months or more.)			
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For mild allergic reactions, most respondents sought medical advice (45.8%) or stopped the drug and waited (34.2%), while fewer used OTC antihistamines (4.7%) or continued the medicine (15.3%). When medical care was costly, 43.3% preferred government clinics, 31.9% still saw a doctor, 20.3% self-medicated, and 4.5% relied on online research. Nearly half (47.5%) trusted OTC drugs only for minor issues, while 29.0% preferred doctors for major ones.

About 39.1% found medicine ads informative, 34.9% neutral, and 25.0% believed they encouraged unsafe use. Over half (57.2%) considered herbal medicines safer. Most chose drugs based on past prescriptions (42.8%) or pharmacist advice (31.2%). While 56.9% recognized antibiotic resistance risks, 24.0% were unsure and 19.1% unaware. Only half (50.2%) rarely read prescription info before self-medicating, and 35.6% admitted using self-medication for chronic conditions lasting over three months.

Knowledge regarding practices of Self-Medication with Anti-infectives

Table 4: Study population on the knowledge of self-medication with anti-infectives

Parameter		Total respondents	
		n	%
Which of these illnesses did you use anti-infectives to treat yourself?	Eye infection	71	17.6
	Running nose	88	21.8
	Cough	100	24.8
	Vomiting	49	12.1
	Fever	96	23.8
How did you determine the anti-infective dosage?	By checking the prescribing information	101	25.0
	Internet	70	17.3
	Previous experience	164	40.6
	Consult a healthcare professional	65	16.1
	Advertisements	4	1.0
Did you ever change the dosage of anti-infectives during self-medication?	Yes	190	47.0
	No	128	31.7
	Sometime	86	21.3
Have you ever used anti-infective drugs without knowing if the illness was bacterial, viral, or fungal?	Yes	231	57.2
	No	173	42.8
Would you recommend self-medicating with anti-infective drugs to someone with similar symptoms?	Yes	230	56.9
	No	174	43.1

Practices of Self-Medication with Eye Infection

Table 5: Study population on the knowledge of self-medication with Eye Infection

Parameter		Total respondents	
		n	%
How long has it been since you took care of yourself?	Currently	64	15.8
	Last month	92	22.8
	Last 6 months	82	20.3
	Don't remember	166	41.1
Which symptoms or indicators led you to self-medicate with your eyes?	Redness	108	26.7
	Itching	109	27.0
	Foreign body sensation	52	12.9
	Dryness of the eye	43	10.6
	Watering of the eye	43	10.6
	Eye irritation	49	12.1
Does your problem become better after taking the eye medication?	Yes	249	61.6
	No	72	17.8
	Sometime	81	20.0
How frequently do you look up the expiration date?	Always	263	65.1
	Occasionally	83	20.5
	Rarely	46	11.4
	Never	9	2.2

Ocular self-medication was common, with 15.8% currently practicing it, 22.8% in the past month, and 20.3% in the past six months, while 41.1% couldn't recall the last time. Common symptoms prompting self-use were itching (27.0%) and redness (26.7%), followed by irritation, dryness, watering, and foreign body sensation. Most (61.6%) felt better after self-medicating, though 37.8% saw little or no improvement, suggesting possible ineffective treatment. Encouragingly, 65.1% always checked expiry dates, but some did so irregularly, highlighting a need for greater awareness on safe and responsible use of eye medications.

Survey results showed that fever (23.8%), cough (24.8%), and runny nose (21.8%) were the main reasons for self-medicating with anti-infectives, followed by eye infections (17.6%) and vomiting (12.1%). Nearly half (47.0%) admitted adjusting doses, and 57.2% used anti-infectives without knowing the infection type, raising concerns about misuse and resistance. Over half (56.9%) said they would advise others to self-medicate, indicating normalization of unsafe practices. Overall, the findings reveal poor awareness and highlight the need for targeted health education on proper anti-infective use.

Practices of Self-Medication with Skin Infection

Table 6: Study population on the knowledge of self-medication with Skin Infection

Parameter		Total respondents	
		n	%
For what kind of skin irritation have you previously taken medication on your own?	Rashes	107	26.5
	Itching or redness	117	29.0
	Dryness or peeling skin	66	16.3
	Acne or pimples	114	28.2
Which type of product works best for you when it comes to skin irritation?	Creams or ointments	159	39.4
	Oral antihistamines or tablets	73	18.1
	Herbal or natural products	96	23.8
	Home remedies	76	18.8
How do you choose between synthetic products and natural remedies for skin irritation?	Based on availability at home	166	41.1
	Based on recommendations from trusted people	121	30.0
	Based on the severity of the irritation	80	19.8
	Always stick to one category	37	9.2
Which of the following do you believe can unintentionally worsen skin irritation?	Frequent handwash	152	37.6
	Use of scented lotions	130	32.2
	Exposure to sunlight after applying the cream	122	30.2
Have you ever used a skincare product influenced by celebrities?	Yes	228	56.4
	No	176	43.6
What's the most unusual remedy you've tried for skin irritation?	Raw foods (e.g., honey, yogurt)	182	45.0
	Essential oils	137	33.9
	Household items (e.g., baking soda, vinegar)	85	21.0

The study found frequent self-medication for skin issues, mainly itching or redness (29.0%), acne (28.2%), rashes (26.5%), and dryness (16.3%). Most preferred topical creams or ointments (39.4%), followed by herbal products (23.8%), home remedies (18.8%), and oral medicines (18.1%). Convenience influenced choices for 41.1% of respondents, while 30.0% relied on others' advice.

Misconceptions were seen in perceived causes of irritation, like scented lotions (32.2%) or sun exposure after creams (30.2%). Celebrity influence was strong—56.4% admitted marketing affected their choices. Non-traditional remedies such as yogurt or honey (45.0%) and essential oils (33.9%) were also common. Overall, self-medication was driven by familiarity, accessibility, and social influence, highlighting the need for education on safe, evidence-based skin care practices.

The statistical analysis found no significant association between self-medication (SM) and most sociodemographic variables. Males showed a slightly higher likelihood of SM than females (OR = 1.43, 95% CI: 0.864–2.367, $p = 0.165$), but this was not statistically significant. Age also showed no meaningful association ($p = 0.533$), though respondents above 50 years had a higher but unreliable OR due to their small number. Employment status did not significantly influence SM behaviour ($p = 0.525$), with similar tendencies among employed, unemployed, and student groups.

Education level showed the only significant difference—diploma holders were considerably less likely to self-

medicate compared to high school graduates (OR = 0.099, 95% CI: 0.020–0.488). However, other educational groups showed no significant association (p = 0.131 overall).

In summary, gender, age, and employment had no statistically significant relationship with self-medication, while diploma holders showed a notably lower tendency. The wide confidence intervals in some subgroups indicate limited data and warrant cautious interpretation.

Result of Binary Logistic Regression

Predictors		Total respondents		Prevalence of SM behavior		P value (overall)	Odds Ratio	95% Confidence Interval for the Odds Ratio Number
		n	%	n	%			
Gender	Female	177	43.8	139	45.7	0.165	Reference	
	Male	227	56.2	165	54.3		1.430	0.864 – 2.367
Age	18	37	9.2	25	8.2	0.533	Reference	
	18-30	280	69.3	213	70.1		0.649	0.287 – 1.463
	31-50	79	19.6	61	20.1		0.762	0.268 – 2.168
	above 50	8	2.0	5	1.6		1.815	0.228 – 14.43
Employment status	Employed	115	28.5	92	30.3	0.525	Reference	
	Unemployed	93	23.0	65	21.4		1.599	0.813 – 3.142
	Student	194	48.0	146	48.0		1.248	0.615 – 2.532
	Retired	2	0.5	1	0.3		3.237	0.079 – 132.13
Qualification Level	High school	72	17.8	48	15.8	0.131	Reference	
	Bachelor's degree	221	54.7	161	53.0		0.809	0.438 – 1.494
	Master's degree	67	16.6	53	17.4		0.627	0.272 – 1.447
	Doctorate	1	0.2	1	0.3		0.000	0.000 – 0.000
	Diploma	39	9.7	37	12.2		0.099	0.020 – 0.488
	Other	4	1.0	4	1.3		0.000	0.000 – 0.000

DISCUSSION

This study looked at the relationship between sociodemographic characteristics and the frequency of self-medication (SM) behavior. While there were no statistically significant correlations between SM and age, gender, or work status, there was one noteworthy exception: those with a diploma had far lower odds of SM than those with only a high school degree. The lack of a significant gender difference in SM prevalence, with both men and women exhibiting comparable levels of engagement, is consistent with research from Malaysia and Ethiopia that found gender differences in healthcare-seeking behaviour and medication access had no discernible impact on SM practices.

In this study, employment position also had no discernible impact on the prevalence of SM. The biggest percentage of self-medicators were students; however, this is probably due to their prevalence in the sample rather than factors associated with work. Due to financial barriers to healthcare access, some previous studies have reported a higher prevalence among unemployed people. However, other studies found no significant association, possibly because

over-the-counter medications are widely available and inexpensive in many areas.

In contrast to high school graduates, those with a diploma showed a much higher chance of SM, making educational qualification the most notable conclusion. In contrast, studies conducted in Pakistan and Jordan have found that SM is more common among those with higher levels of education, presumably as a result of their greater trust in their medical expertise. One reason for the current finding might be that some diploma programs promote more careful pharmaceutical use by including health literacy components or vocational training in health-related sectors. As an alternative, certificate holders may be less dependent on SM because of their training or career, which provides them with more structured access to healthcare. As a result, appropriate SM behaviour may be better shaped by focused educational interventions rather than by overall academic achievement. Overall, the results indicate that neither gender, age, nor work position substantially influenced SM behaviour in this research group; however, educational background—particularly

vocational training—may have an impact on prudent medicine practices. High-risk groups continue to be the subject of specific awareness programs due to the possible public health hazards of improper SM, particularly in light of severe medication responses and antibiotic resistance.

CONCLUSION

Self-medication is a practice in which an individual takes the medicine on their own. Various types of self-medication can be used, including over-the-counter drugs, herbal remedies, or even prescription medicine. Sometimes it provides benefits when we treat accurately, but when we treat inappropriately, it may lead to many risks. People resort to self-medication because, in today's times, treatment and medicines are very costly, and they can't afford them. This is why people choose to self-medicate. People who have knowledge and an old prescription also self-medicate to save time. Some people lack knowledge about self-medication, so it is important to provide them with information and education about it. This way, they can self-medicate effectively during emergencies or when access to healthcare is limited. To collect data on how many people practice self-medication today, we need to do group discussions, study past data, carry out surveys, and conduct population-based studies.

Future Scope

Future research and public health efforts should focus on promoting safer self-medication practices through improved health literacy, stronger regulations on over-the-counter drug sales, and better access to professional medical advice. More studies are needed to explore how technology, such as mobile health apps and online consultations, can guide individuals to make safer decisions about self-treatment. Developing targeted awareness campaigns and educational programs can help people understand proper medicine use, potential risks, and when to seek professional care. Policymakers should also consider stricter controls to prevent the misuse of high-risk drugs and to address the rising threat of antibiotic resistance. By combining research, community education, and effective policy measures, the safe practice of self-medication can be encouraged while minimizing its risks to individual and public health.

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