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Review on Prevalence and Evaluation of Self-Medication

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Abstract:

Self-medication is a rapidly growing global health concern, characterized by the selection and use of medicines by individuals to treat self-recognized symptoms without professional supervision. This review evaluates the prevalence, determinants, and consequences of self-medication practices across various populations. Findings from multiple studies indicate that prevalence rates range widely from 40% to 80%, depending on factors such as geographical location, healthcare accessibility, educational status, and socioeconomic conditions. Commonly self-medicated drugs include analgesics, antipyretics, antibiotics, cough remedies, and traditional herbal preparations. The major drivers of self-medication include convenience, previous experience with similar illnesses, cost-saving behavior, and limited access to healthcare services—especially in rural settings. Although self-medication may offer benefits such as quick relief and reduced healthcare burden, it poses significant risks, including incorrect diagnosis, drug interactions, adverse drug reactions, and the alarming rise of antimicrobial resistance. This review highlights the urgent need for stronger regulatory control of over-the-counter medications, increased public awareness, and enhanced pharmacist-driven counselling to promote responsible self-medication practices. Strengthening health literacy and implementing community-level interventions are essential steps toward reducing the harmful effects associated with irrational self-medication.

Keywords: Self-Medication, Over-the-counter medication, Prevalence, Predictors, Anti-allergens,Urban health.

INTRODUCTION:

Self-medication refers to the use of medicines by individuals to treat self-diagnosed conditions without consulting a healthcare professional. It includes both over-the-counter (OTC) medications and prescription drugs obtained without proper authorization. The World Health Organization (WHO) recognizes responsible self-medication as part of self-care but warns that irrational use poses serious public health risks such as misdiagnosis, drug interactions, adverse effects, and antimicrobial resistance.[1]

Evaluating self-medication practices is essential for identifying its determinants, patterns, benefits, and associated risks, thereby enabling policymakers and healthcare professionals to develop strategies that promote rational drug use. Understanding prevalence across different demographic groups helps guide targeted educational interventions and regulatory reforms.

PREVALENCE OF SELF-MEDICATION PRACTICES AMONG URBAN VS RURAL POPULATIONS

Self-medication is defined as the consumption of medicines by individuals to treat self-recognized symptoms without consulting a healthcare professional.[2] It is common in both urban and rural settings, but the motivations, accessibility, and patterns differ significantly between the two populations.

Prevalence in Urban Populations:

Urban communities generally show higher prevalence of self-medication due to:

- Easy access to pharmacies.

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- Higher exposure to advertisements and online medical information.
- Busy lifestyle and convenience preference.
- Better economic capability to purchase OTC drugs.

Reported Prevalence:

- A study in India reported that 73% of urban residents practiced self-medication.
- WHO regional surveys show urban self-medication rates commonly ranging from 60–80%.

Commonly Used Drugs:

- Analgesics (paracetamol, ibuprofen)
- Antibiotics
- Cough syrups
- Antacids
- Multivitamins.

Prevalence in Rural Populations:
Self-medication in rural areas is influenced by:

- Limited access to healthcare facilities
- Poor doctor–patient ratio
- Economic constraints
- Influence of local healers or traditional medicines

Reported Prevalence:

- A rural-based study in Karnataka recorded 45–55% prevalence.
- Another cross-sectional study in Nepal found 59% rural self-medication prevalence, often due to distance from healthcare centers.

Commonly Used Medications:

- Herbal preparations
- Pain killers
- Antibiotics (often irrational use)
- Home remedies

EVALUATION OF SELF-MEDICATION AMONG COLLEGE STUDENTS (MEDICAL VS NONMEDICAL)
Self-medication is widely practiced among young adults, especially college students, due to increased academic stress, easy access to medications, and growing confidence in managing minor ailments independently.[3] College campuses represent a unique demographic where. medical students possess greater drug knowledge, while non-medical students often rely on peer advice, past prescriptions, or online sources. Evaluating the patterns, motivations, and risks of self-medication in these two groups is essential for promoting rational drug use.

Prevalence of Self-Medication Among Students:
Studies consistently show that medical students exhibit higher prevalence of self-medication (60–90%) compared to non-medical students (40–70%).
This difference is attributed to:

- Higher pharmacological knowledge
- Easy access to medical samples or prescriptions
- Greater confidence in diagnosing minor illnesses

However, non-medical students are more prone to inappropriate drug choice and misuse, particularly with antibiotics, analgesics, and sedatives.
Examples from research:

- A study in South India reported 83% prevalence among medical students and 67% among non-medical students.[4]
- A Nigerian study showed 76% among medical students vs 51% in non-medical students..

Commonly Used Medications:
Medical Students:

- Analgesics
- Antipyretics
- Antacids
- Antibiotics (more rational use)
- Antihistamines

Non-Medical Students:

- Analgesics
- Antibiotics (often irrational use)

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- Cough syrups
- Energy supplements
- Sleep-inducing OTC drugs

PARAMETERS OF SELF-MEDICATION

There are various parameters which were assessed during this study starting from age, sex, area, income, education, occupation, and reasons for self-medications, source of self-medication, disease state and list of medicines used during self-medication.[5]

Gender:

During this study we have taken total 300 participants I which we had equal population of both the genders.

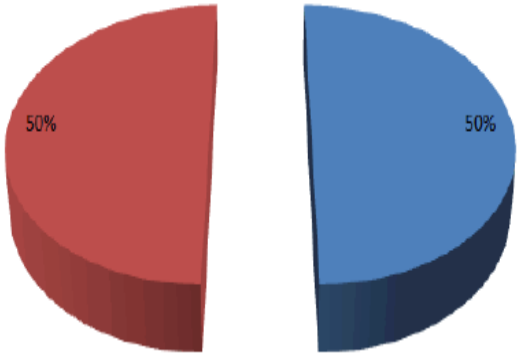

Figure 1: Gender.
Note : ( ) Male; ( ) female

Area of distribution:

Most of the participants belong to urban population around 55% i.e Solan, Shimla and Mandi and rest of the population i.e[6] 45% belong to the rural population nearby villages of Solan and Shimla i.e Waknaghat, Shogi, Kandaghat and Mansar.

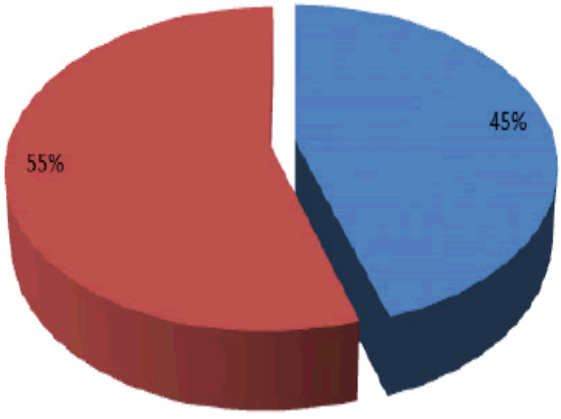

Figure 2: Area.
Note : ( ) Rural; ( ) Urban

Comparison of urban and rural male and female:

As above cited in total urban population there were around 65% male and 35% female while in rural population there were 45% male and 55% females.

Source of income per year:

Source of income is the major factor for self-medication and we had divided the income strata i.e. between 50 k-1 lakh, 1 lakh-2 lakh, 2 lakh- 3 lakh and 3 lakh-4 lakh. [7]On this basis we concluded that there were participants from every strata i.e 35%, 25%, 23% and 17% respectively.

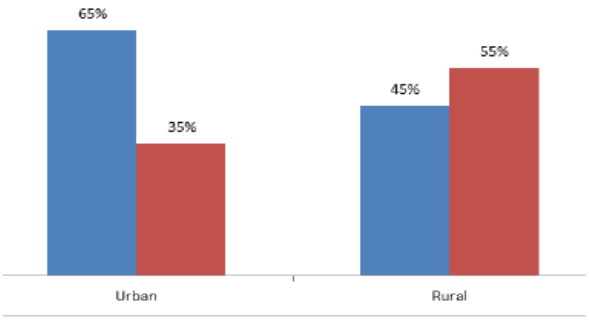

Figure 3: Comparison of urban and rural male and female.
Note : ( ) Male; ( ) female

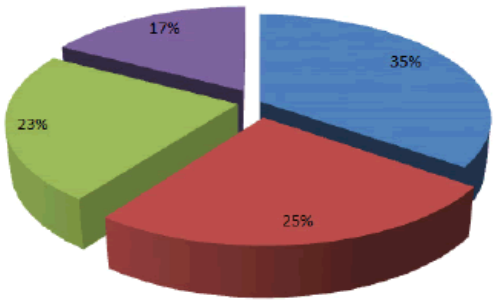

Figure 4: Income per year.
Note : ( ) 50000-100000; ( ) 100000-200000; ( ) 50000-100000; ( ) 100000-200000

Education level:

Education is the main pillar to the self-medication, patients are more aware about each and every drugs prevailing.[8] In this study we had divided the education level from Matriculation, Secondary, Graduation, and Post-Graduation.

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The data revealed that there were 15% participants were matric passed 25% were higher secondary, 20% were graduated and 40% were post graduated

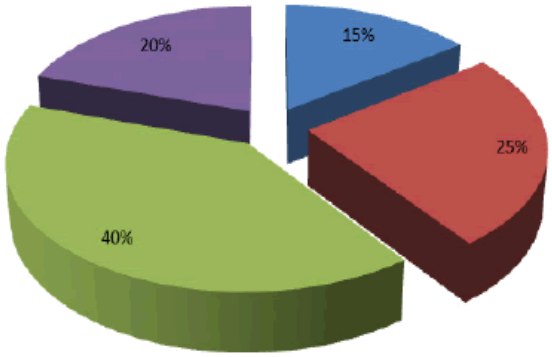

Figure 5: Education Level.
Note : ( ) matric; ( ) secondary; ( ) graduate; ( ) post graduate

EVALUATION OF SELF-MEDICATION AMONG PREGNANT WOMEN AND ASSOCIATED RISK

Self-medication refers to the use of medicines by individuals to treat self-recognized symptoms without medical supervision. During pregnancy, this practice becomes particularly dangerous because drug safety, dosage, and fetal sensitivity differ significantly compared to non-pregnant adults.[9] Despite these risks, self-medication remains common among pregnant women in low- and middle-income countries due to limited access to antenatal care, cultural beliefs, economic constraints, and reliance on OTC medicines or herbal remedie.

Pregnancy is associated with common discomforts—nausea, headache, acidity, constipation—prompting many women to consume medications based on previous experiences or advice from family and friends. However, many drugs can cross the placenta and cause teratogenicity, congenital anomalies, fetal toxicity, growth restriction, and preterm labor (Benguigi et al., 2017).[10] Evaluating self-medication behavior during pregnancy is essential to improve maternal-fetal safety and guide public health strategies.

Prevalence of Self-Medication Among Pregnant Women:

Several studies show that 20%–68% of pregnant women self-medicate, depending on region, education, and accessibility of healthcare.As reported studies:

- In Ethiopia, 67.9% of pregnant women practiced self-medication[11].
- A study in India recorded 52% prevalence, with most using analgesics and herbal preparations.
- In Nigeria, 42% of pregnant women reported using OTC or herbal medicines without consultation.

Commonly Used Medications:
OTC Medicines:

- Paracetamol
- Antacids
- NSAIDs (ibuprofen, diclofenac)
- Vitamin supplements

Prescription Drugs Misused:

- Antibiotics
- Anti-emetics
- Antihistamines

Associated Maternal and Fetal Risks:
Maternal Risks:

- Drug interactions
- Incorrect dosing
- Masking of serious complications
- Allergic reactions
- Liver or kidney toxicity

Fetal Risks:

- Teratogenicity: congenital malformations (e.g., from NSAIDs, retinoids)
- Fetotoxicity: impaired organ development
- Preterm labor or miscarriage[12]
- Neonatal withdrawal symptoms
- Stillbirth or growth restriction

Need for Evaluation and Intervention:

- Strengthening maternal health systems is crucial. Recommendations include:
- Educating pregnant women about drug risks
- Counseling during antenatal visits
- Restricting OTC sales of teratogenic drugs[13]

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- Training pharmacists to advise pregnant customers
- Conducting community awareness campaigns

KNOWLEDGE, ATTITUDE AND PRACTICE STUDY ON SELF-MEDICATION GENERAL POPULATION AMONG UNITED ARAB EMIRATES

Over-the-counter (OTC) medication usage is widespread globally, yet there remains a paucity of research regarding its use and understanding among specific demographics, particularly in rapidly growing populations like that of the United Arab Emirates. This study aimed to assess the knowledge, attitudes, and practices (KAP) of OTC drug use among the general population of the UAE,[14] with a focus on young women.A cross-sectional study was conducted over a six-month period, from December 2022 to May 2023, among the general population aged 18-65 years in the UAE.[15] Participants were recruited after informed consent through online platforms, and data were collected using a validated questionnaire comprising socio-demographic details and questions assessing knowledge, attitude, and practice (KAP) regarding OTC drug use. Descriptive statistics and inferential analyses were conducted to analyse the data. A total of 197 individuals participated in the study. The study revealed moderate knowledge scores among young women regarding OTC medication, with significant gaps in understanding their use and limitations. Positive attitudes towards OTC drug use were prevalent. Self-medication was common (78.2%). Significant associations were found between gender, age, and knowledge/attitude scores, emphasising the need for targeted interventions.[16] No significant associations were observed with educational, occupational status, or chronic diseases. In conclusion, this study provides valuable insights into OTC medication use among young women in the UAE. It highlights the importance of addressing knowledge gaps and promoting safe OTC medication practices through collaborative efforts between healthcare professionals,
policymakers, and[17] educational institutions. By targeting specific demographics and addressing key knowledge gaps, stakeholders can work towards improving health literacy and promoting responsible self-medication behaviours among the general population.

Therefore, this study proposes following hypothesis:

H1: Students with higher knowledge of self-medication are more likely to practice it compared to those with less knowledge.

H2: Students with higher knowledge of Adverse Drug Reactions (ADR) are more likely to practice self-medication compared to those with less knowledge.[18]]

H3: Students with a positive attitude towards self-medication are more likely to practice it than their counterparts.

H4: Students with a positive attitude towards Adverse Drug Reaction (ADR) are more likely to practice it than their counterparts.

H5: Students who find self-medication more convenient are more likely to practice self-medication than others.

H6: Students who find prescribed medication more inconvenient are more likely to practice self-medication than others.

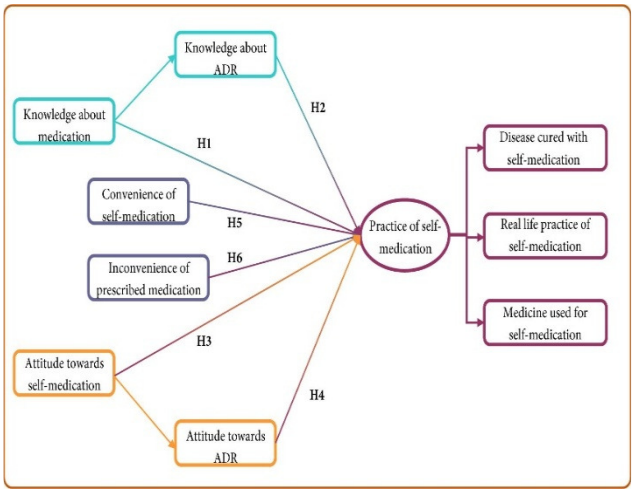

Figure6: Conceptualized hypothesis.

ROLE OF THE PHARMACIST IN SELF CARE AND SELF-MEDICATION

The pharmacist has several functions, outlined below.

As a communicator:

• the pharmacist should initiate dialogue with the patient (and the patient's physician, when necessary) to obtain a sufficiently detailed medication history;

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• in order to address the condition of the patient appropriately the pharmacist must ask the patient key questions and pass on relevant information to him or her (e.g. how to take the medicines and how to deal with safety issues);
• the pharmacist must be prepared and adequately equipped to perform a proper screening for specific conditions and diseases,[19]without interfering with the prescriber's authority;
• the pharmacist must provide objective information about medicines;
• the pharmacist must be able to use and interpret additional sources of information to satisfy the needs of the patient;
• the pharmacist should be able to help the patient undertake appropriate and
responsible self-medication or, when necessary, refer the patient for medical advice;
• the pharmacist must ensure confidentiality concerning details of the patient's
condition.

As a quality drug supplier:
• the pharmacist must ensure that the products he/she purchases are from reputable[20] Sources and of good quality;
• the pharmacist must ensure the proper storage of these products.

As a trainer and supervisor:
To ensure up-to-date quality service, the pharmacist must be encouraged to participate in Continuing professional development activities such as continuing education.[21] The pharmacist is often assisted by non-pharmacist staff and must ensure that the services Rendered by these auxiliaries correspond to established standards of practice.
To achieve this the pharmacist must develop:
• protocols for referral to the pharmacist;
• protocols for community health workers involved with the handling and distribution of medicines.
The pharmacist must also promote the training and supervise the work of non-pharmacist Staff.
As a collaborator:
It is imperative that pharmacists develop quality collaborative relationships with:
• other health care professionals;
• national professional associations;
• the pharmaceutical industry;
• governments (local/national); and,
• patients and the general public.
In so doing, opportunities to tap into resources and expertise, and to share data and experiences, in order to improve self-care and self-medication, will be enhanced.

As a health promoter:
As a member of the health-care team, the pharmacist must:
• participate in health screening to identify health problems and those at risk in the community;[22]
• participate in health promotion campaigns to raise awareness of health issues and Disease prevention; and
• provide advice to individuals to help them make informed health choices.

CONCLUSION
Self-medication is a highly prevalent and growing global public health concern, influenced by factors such as easy availability of medicines, financial constraints, prior experience with illnesses, and widespread access to online health information. Although responsible self-care can contribute to reduced healthcare burden, the findings consistently show that irrational and unsupervised self-medication poses significant risks, including adverse drug reactions, masking of serious diseases, drug–drug interactions, and the alarming rise of antimicrobial resistance.

The evaluation of self-medication practices across various populations—urban vs. Rural residents, college students, pregnant women, and individuals with chronic illnesses—demonstrates that prevalence is shaped by socio-demographic, cultural, and economic determinants. Commonly misused drug classes such as analgesics, antipyretics, antibiotics, and gastrointestinal medications highlight gaps in drug literacy, regulatory enforcement, and public awareness.

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