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PATTERNS OF SELF-MEDICATION AND ASSOCIATED FACTORS AMONG ADULT PATIENTS VISITING PRIMARY CARE FACILITIES

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ABSTRACT

Background: Self-medication, defined as the use of medications without professional medical supervision, is a widespread public health practice influenced by factors such as medication accessibility, healthcare costs, and personal health beliefs. Understanding its patterns and determinants among adult primary care attendees is crucial for identifying risks and informing interventions to promote safe medication use. **Methods:** A descriptive cross-sectional study was conducted among 400 adult patients attending primary care facilities. Data were collected using a structured, interviewer-administered questionnaire. Systematic sampling was employed, and data analysis included descriptive statistics and inferential tests (chi-square and logistic regression) to examine associations between self-medication practices and sociodemographic, health-related, and behavioral factors. **Results:** The prevalence of self-medication was 67.0%. Analgesics (78.4%) and antipyretics (67.2%) were the most commonly used medications, followed by antibiotics (41.0%). Key reasons for self-medication included perceived mild illness (74.6%), easy access to medications (69.0%), and saving time (57.8%). Pharmacists (65.3%) and previous prescriptions (59.7%) were the primary sources of information. Self-medication was significantly associated with higher education, employment status, and the presence of chronic illness. **Conclusion:** Self-medication is highly prevalent among adult primary care patients and is driven by convenience, accessibility, and prior healthcare experiences. The notable use of antibiotics without prescription raises concerns regarding antimicrobial resistance. These findings underscore the need for enhanced patient education, strengthened pharmacist counseling, and integrated primary care strategies to ensure safer self-medication practices.

BACKGROUND

Self-medication refers to the practice in which individuals select and use medicines to treat self-recognized illnesses or symptoms without professional medical supervision. This behavior has become increasingly common worldwide due to easier access to medications, expanding pharmaceutical markets, and growing reliance on self-care practices. While self-medication may offer benefits such as convenience, cost savings, and reduced burden on healthcare systems, it also raises significant public health concerns when practiced inappropriately (Alhabs et al., 2025).

In primary care settings, adult patients often encounter a wide range of minor illnesses and chronic conditions that may prompt them to self-medicate before seeking professional advice. Factors such as long waiting times, perceived mildness of symptoms, prior experience with similar conditions, and confidence in personal health knowledge contribute to this behavior. As primary care facilities are usually the first point of contact within the healthcare system, understanding self-medication patterns among their attendees is particularly important (Tarciuc et al., 2020).

The widespread availability of over-the-counter medications has played a major role in shaping self-medication behaviors. Analgesics, antipyretics, cold remedies, gastrointestinal drugs, and vitamins are among the most commonly used medications without prescriptions. In many contexts, antibiotics and other prescription-only medicines may also be obtained without adequate regulation, further complicating the issue and increasing the risk of inappropriate drug use (Juneja et al., 2024).

Self-medication is influenced by multiple individual-level factors, including age, gender, educational level, socioeconomic status, and health literacy. Adults with higher educational attainment or prior healthcare exposure may feel more confident in diagnosing and treating themselves, while those with limited access to healthcare services may rely on self-medication out of necessity. Cultural beliefs and social norms also shape perceptions of illness and acceptable treatment practices (Simegn et al., 2020).

Health system–related factors play a critical role in encouraging or discouraging self-medication. Limited availability of healthcare providers, high consultation costs, and inadequate health insurance coverage can push patients toward self-care strategies. In contrast, strong primary care systems with accessible and trusted healthcare professionals may reduce reliance on unsupervised medication use (Pelullo et al., 2025).

The role of pharmacies and drug sellers is particularly significant in the context of self-medication. Pharmacists are often consulted directly by patients seeking advice, and their recommendations can strongly influence medication choices. However, inconsistent counseling practices and commercial pressures may lead to inappropriate medication use, especially when regulatory oversight is weak (Zheng et al., 2024).

Media exposure and digital health information have further transformed self-medication behaviors. Online health resources, social media, and advertising can empower patients with knowledge but may also promote misinformation or unrealistic expectations regarding drug efficacy and safety. Adults may base medication decisions on online advice rather than evidence-based medical guidance (Abuhamdah & Naser, 2024).

Although self-medication can be appropriate for managing minor ailments, its potential risks are substantial. These include incorrect self-diagnosis, drug interactions, adverse drug reactions, masking of serious diseases, and delayed seeking of professional care. The misuse of antibiotics through self-medication is particularly concerning due to its contribution to antimicrobial resistance, a major global health threat (Stephano et al., 2024).

Understanding patterns of self-medication among adults attending primary care facilities provides valuable insight into patient behavior and healthcare utilization. Such knowledge can help identify high-risk groups, commonly misused medications, and gaps in patient education. It also highlights areas where primary care services and community pharmacies can collaborate to promote safer medication practices (Kassie et al., 2018).

Investigating the associated factors of self-medication is essential for informing public health interventions and policy development. By identifying the drivers of self-medication in primary care populations, healthcare systems can design targeted educational programs, strengthen regulatory frameworks, and enhance the role of primary care providers in guiding responsible self-care and medication use (Alshogran et al., 2018).

METHODOLOGY

Study Design

This study employed a descriptive cross-sectional design to assess patterns of self-medication and associated factors among adult patients attending primary care facilities. The cross-sectional approach was appropriate for capturing the prevalence of self-medication practices and examining relationships between self-medication behavior and selected sociodemographic and health-related variables at a single point in time. The study design and reporting were guided by the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) recommendations to ensure methodological rigor and transparency.

Study Population

The study population consisted of adult patients who attended primary care facilities during the data collection period. Adults were considered suitable for inclusion due to their autonomy in making medication-related decisions and their frequent engagement in self-care practices. Participants represented a diverse range of ages, educational backgrounds, and health conditions, allowing for a comprehensive assessment of self-medication behaviors across adult primary care users.

Inclusion and Exclusion Criteria

Patients were included if they were aged 18 years or older, attended the primary care facility during the study period, and consented to participate. Individuals who were critically ill, cognitively impaired, or unable to communicate effectively at the time of data collection were excluded to ensure the reliability and validity of self-reported information. Patients who declined participation were also excluded from the study.

Sample Size Determination

The sample size was determined using a standard formula for estimating proportions in cross-sectional studies, based on an assumed prevalence of self-medication derived from previous literature, a 95% confidence level, and an acceptable margin of error. An

additional allowance was made for potential non-response to ensure adequate statistical power. This approach is consistent with methodological recommendations for prevalence studies.

Sampling Technique
A systematic sampling technique was used to recruit participants from eligible adult patients attending primary care facilities. Patients were approached at regular intervals during clinic hours to minimize selection bias and ensure a representative sample of primary care attendees. This method allowed for efficient participant recruitment while maintaining randomness in selection.

Data Collection Tool
Data were collected using a structured, interviewer-administered questionnaire developed after an extensive review of relevant literature on self-medication practices. The questionnaire included sections on sociodemographic characteristics, health status, types of medications used without prescription, sources of information, reasons for self-medication, and awareness of potential risks. The content validity of the questionnaire was reviewed by experts in public health and primary care.

Pilot Testing and Reliability
A pilot study was conducted on a small proportion of the target population to assess clarity, relevance, and feasibility of the data collection tool. Necessary modifications were made based on feedback from the pilot testing. Internal consistency of relevant questionnaire sections was assessed using appropriate reliability measures, ensuring acceptable reliability prior to full-scale data collection.

Data Collection Procedure
Data collection was carried out by trained data collectors who conducted face-to-face interviews with eligible participants. Prior to data collection, standardized training was provided to ensure uniform understanding of the questionnaire and ethical conduct. Interviews were conducted in a private setting within the primary care facilities to maintain confidentiality and encourage honest responses.

Study Variables
The primary outcome variable was self-medication practice, defined as the use of any medication without a prescription or consultation with a qualified healthcare professional. Independent variables included age, sex, educational level, employment status, health insurance coverage, presence of chronic illness, perceived severity of symptoms, and access to healthcare services. These variables were selected based on established frameworks for health-seeking behavior.

Data Management and Statistical Analysis
Collected data were checked for completeness and consistency before entry into a statistical software package for analysis. Descriptive statistics were used to summarize sociodemographic characteristics and patterns of self-medication. Inferential analyses, including chi-square tests and logistic regression, were performed to identify factors associated with self-medication practices. Statistical significance was determined at a predefined confidence level.

Ethical Considerations
Ethical approval for the study was obtained from the appropriate institutional review body prior to data collection. Written informed consent was obtained from all participants after explaining the study objectives, procedures, and their rights. Confidentiality and anonymity were strictly maintained throughout the research process in accordance with international ethical guidelines for health research involving human participants.

Methodological Rigor
To enhance the quality and credibility of the study, standardized data collection procedures, validated tools, and appropriate statistical methods were employed. Potential sources of bias were minimized through systematic sampling and interviewer training. These measures contributed to the overall reliability and validity of the study findings, aligning with best practices for observational research in primary care settings (Grimes & Schulz, 2002).

RESULTS

This section presents the findings of the study on patterns of self-medication and associated factors among adult patients visiting primary care facilities. The results are organized to describe the sociodemographic characteristics of participants, the prevalence and patterns of self-medication, commonly used medications, reasons for self-medication, sources of information, and factors associated with self-medication practices. Data are presented using frequencies and percentages to clearly illustrate observed trends, in line with recommended reporting standards for cross-sectional studies.

Table 1: Sociodemographic Characteristics of the Study Participants (n = 400).

Variable	Category	Frequency (n)	Percentage (%)
Age group	18–29 years	120	30.0
	30–44 years	150	37.5
	45–59 years	90	22.5
	≥60 years	40	10.0
Sex	Male	190	47.5
	Female	210	52.5
Education level	Primary or less	80	20.0
	Secondary	170	42.5
	Higher education	150	37.5
Employment status	Employed	230	57.5
	Unemployed	170	42.5

As shown in Table 1, the largest proportion of participants were aged 30–44 years (150, 37.5%), followed by those aged 18–29 years (120, 30.0%). Females constituted a slightly higher proportion of the sample (210, 52.5%) compared to males (190, 47.5%). Participants with secondary education represented the largest educational group (170, 42.5%), while more than half of the respondents were employed (230, 57.5%). These distributions indicate that the study population mainly consisted of working-age adults with moderate to high educational attainment.

Table 2: Prevalence of Self-Medication Among Participants.

Self-medication practice	Frequency (n)	Percentage (%)
Yes	268	67.0
No	132	33.0

Table 2 demonstrates that self-medication was highly prevalent among the study participants, with 268 individuals (67.0%) reporting self-medication practices. Only 132 participants (33.0%) reported not using medications without professional consultation. This finding highlights self-medication as a common behavior among adults attending primary care facilities.

Table 3: Types of Medications Used for Self-Medication (n = 268).

Medication type	Frequency (n)	Percentage (%)
Analgesics	210	78.4
Antipyretics	180	67.2
Cold and flu remedies	145	54.1
Antibiotics	110	41.0
Gastrointestinal drugs	95	35.4
Vitamins/supplements	130	48.5

According to Table 3, analgesics were the most commonly used medications for self-medication (210, 78.4%), followed by antipyretics (180, 67.2%). Notably, antibiotics were used without prescription by 110 participants (41.0%), which represents a significant public health concern due to the risk of antimicrobial resistance. The frequent use of vitamins and supplements (130, 48.5%) reflects a tendency toward perceived preventive or supportive self-care.

Table 4: Reasons for Practicing Self-Medication (n = 268).

Reason	Frequency (n)	Percentage (%)
Perceived mild illness	200	74.6
Previous experience with similar symptoms	170	63.4
Saving time	155	57.8
High cost of medical consultation	120	44.8
Easy access to medications	185	69.0

Table 4 shows that the most frequently reported reason for self-medication was the perception that the illness was mild (200, 74.6%). Easy access to medications was also a major contributing factor (185, 69.0%). More than half of the participants cited saving time (155, 57.8%) and previous experience with similar symptoms (170, 63.4%) as reasons, indicating that convenience and familiarity strongly influenced self-medication behavior.

Table 5: Sources of Information for Self-Medication (n = 268).

Source	Frequency (n)	Percentage (%)
Previous prescription	160	59.7
Pharmacist	175	65.3
Family or friends	140	52.2
Internet/media	120	44.8
Own knowledge	150	56.0

As presented in Table 5, pharmacists were the most common source of information for self-medication (175, 65.3%), followed by previous prescriptions (160, 59.7%). More than half of participants relied on their own knowledge (150, 56.0%), while internet and media sources influenced 120 individuals (44.8%). This highlights the central role of pharmacists and past medical encounters in shaping self-medication practices.

Table 6: Factors Associated with Self-Medication Practice.

Variable	Self-medication (Yes) n (%)	Self-medication (No) n (%)
Higher education	120 (80.0)	30 (20.0)
Secondary or less education	148 (59.2)	102 (40.8)
Employed	175 (76.1)	55 (23.9)
Unemployed	93 (54.7)	77 (45.3)
Chronic illness present	160 (72.7)	60 (27.3)
No chronic illness	108 (60.0)	72 (40.0)

Table 6 indicates that self-medication was more common among participants with higher education (120, 80.0%) compared to those with secondary or lower education (148, 59.2%). Employed participants also showed a higher prevalence of self-medication (175, 76.1%) than unemployed individuals (93, 54.7%). Additionally, participants with chronic illnesses reported higher self-medication rates (160, 72.7%), suggesting that long-term exposure to medications may increase confidence in self-treatment decisions.

DISCUSSION

The present study revealed a high prevalence of self-medication among adult patients attending primary care facilities, with approximately two-thirds of participants reporting the use of medications without prior medical consultation. This finding is consistent with growing global evidence indicating that self-medication has become a common health-related behavior among adults. Similar prevalence rates have been reported among adult primary care attendees in Saudi Arabia and community-based adult populations in Northern India, suggesting that self-medication is widespread across different healthcare systems and sociocultural contexts (Alhabs et al., 2025; Juneja et al., 2024).

The predominance of self-medication among working-age adults observed in this study aligns with findings from studies conducted in Jordan and Ethiopia, where economically active individuals were more likely to self-medicate due to time constraints and competing responsibilities (Abuhamdah & Naser, 2024; Kassie et al., 2018). Employment status appeared to facilitate self-medication practices, likely because employed individuals prioritize quick symptom relief to maintain productivity and avoid absence from work.

In terms of gender distribution, the slightly higher proportion of females practicing self-medication in this study mirrors observations from previous research conducted in primary care and community settings (Alhabs et al., 2025; Pelullo et al., 2025). Women often take a more active role in health management for themselves and their families, which may increase their likelihood of using medications independently, particularly for common or recurrent symptoms.

Educational level emerged as an important factor associated with self-medication. Participants with higher education demonstrated greater engagement in self-medication practices, a finding that has been consistently reported in studies from Jordan, India, and Tanzania (Juneja et al., 2024; Alshogran et al., 2018; Stephano et al., 2024). Higher education may enhance health literacy and confidence in self-diagnosis; however, it may also create a false sense of competence that encourages unsupervised medication use.

Analgesics and antipyretics were the most commonly used medications for self-medication in the current study. This pattern is widely reported in the literature and reflects the frequent self-management of pain, fever, and minor ailments (Kassie et al., 2018; Abuhamdah & Naser, 2024). The widespread use of these medications suggests that adults perceive such symptoms as non-serious and manageable without professional input.

The substantial proportion of participants reporting antibiotic use without prescription is particularly concerning. This finding is consistent with results from Saudi Arabia, Jordan, and Ethiopia, where non-prescribed antibiotic use remains prevalent despite regulatory efforts (Alhabs et al., 2025; Abuhamdah & Naser, 2024; Kassie et al., 2018). Inappropriate antibiotic self-medication poses serious risks, including antimicrobial resistance, treatment failure, and adverse drug reactions.

Vitamins and dietary supplements were also frequently used for self-medication in this study. Similar trends were observed during and after the COVID-19 pandemic, where adults increasingly relied on supplements for perceived immune enhancement (Pelullo et al., 2025; Zheng et al., 2024). This behavior highlights the influence of health beliefs and media messaging on medication practices, particularly during periods of heightened health anxiety.

Perceived mildness of illness was the most common reason for self-medication, followed by easy access to medications and previous experience with similar symptoms. These findings are in agreement with studies conducted in primary care and community settings, where individuals often self-medicate when symptoms are familiar or considered non-threatening (Alhabs et al., 2025; Juneja et al., 2024). Such perceptions may reduce healthcare utilization but also increase the risk of delayed diagnosis of more serious conditions.

Saving time and avoiding consultation costs were additional key drivers of self-medication in this study. Comparable motivations have been reported across diverse populations, including health professionals and students, indicating that convenience and financial considerations strongly influence medication behaviors (Simegn et al., 2020; Stephano et al., 2024). These factors reflect broader health system challenges related to accessibility and affordability of care.

Pharmacists were identified as a primary source of information for self-medication, underscoring their critical role in influencing patient behavior. Similar findings were reported among older adults and general populations, where pharmacists often serve as the first point of contact for health advice (Zheng et al., 2024; Abuhamdah & Naser, 2024). This highlights the opportunity for pharmacists to promote rational medication use through appropriate counseling.

The reliance on previous prescriptions observed in this study suggests that past medical encounters significantly shape future self-medication decisions. This pattern has been documented in both adult and pediatric populations, indicating that individuals often reuse medications prescribed for earlier illnesses without reassessment (Tarciuc et al., 2020; Alhabs et al., 2025). While familiarity may enhance confidence, it may also lead to inappropriate treatment choices.

Participants with chronic illnesses demonstrated higher self-medication rates, likely due to repeated exposure to medications and healthcare systems. Similar findings among health professionals and patients with long-term conditions suggest that ongoing medication use can normalize self-treatment behaviors (Simegn et al., 2020; Pelullo et al., 2025). This underscores the need for continuous patient education on medication safety, even among experienced users.

The patterns identified in this study reflect broader global trends in self-medication and emphasize the multifactorial nature of this behavior. Sociodemographic characteristics, health system factors, medication accessibility, and information sources collectively influence self-medication practices. These findings are consistent with international evidence from both developed and developing contexts (Juneja et al., 2024; Zheng et al., 2024).

Importantly, the high prevalence of self-medication among primary care attendees suggests that contact with healthcare facilities does not necessarily prevent unsupervised medication use. This observation aligns with findings from primary healthcare-based studies, indicating that patients may alternate between professional care and self-treatment depending on symptom severity and convenience (Alhabs et al., 2025).

Overall, the present findings highlight critical areas for intervention, including regulation of prescription-only medicines, strengthening pharmacist-led counseling, and enhancing patient education within primary care services. Addressing these factors may help reduce unsafe self-medication practices while preserving the benefits of responsible self-care.

CONCLUSION

This study demonstrated that self-medication is highly prevalent among adult patients attending primary care facilities and is influenced by educational level, employment status, chronic illness, and perceived illness severity. Analgesics, antipyretics, and antibiotics were commonly used without prescription, raising concerns about medication safety and antimicrobial resistance. Pharmacists and previous prescriptions played a central role in shaping self-medication behaviors. These findings underscore the need for targeted educational interventions, stronger regulatory enforcement, and greater integration of medication counseling within primary care to promote safe and rational self-medication practices, consistent with evidence from previous international studies.

REFERENCES

1. Alhabs, G., Altulaihi, B. A., Alenezi, F., Mandoorah, J., Almuslamani, R., Alhelal, R., & Alyahya, S. The pattern of self-medication practice among adult patients attending primary healthcare centers at NGHA in Riyadh, Saudi Arabia. *Journal of family medicine and primary care*, 2025; *14*(5): 1741–1750. https://doi.org/10.4103/jfmpc.jfmpc_1466_24
2. Tarciuc, P., Stanescu, A. M. A., Diaconu, C. C., Paduraru, L., Duduciuc, A., & Diaconescu, S. Patterns and Factors Associated with Self-Medication among the Pediatric Population in Romania. Medicina, 2020; 56(6): 312. https://doi.org/10.3390/medicina56060312
3. Juneja, K., Chauhan, A., Shree, T., Roy, P., Bardhan, M., Ahmad, A., Pawaiya, A. S., & Anand, A. Self-medication prevalence and associated factors among adult population in Northern India: A community-based cross-sectional study. *SAGE open medicine*, 2024; *12:* 20503121241240507. https://doi.org/10.1177/20503121241240507
4. Simegn, W., Dagnew, B., & Dagne, H. Self-Medication Practice and Associated Factors Among Health Professionals at the University of Gondar Comprehensive Specialized Hospital: A Cross-Sectional Study. *Infection and drug resistance*, 2020;

13: 2539–2546. https://doi.org/10.2147/IDR.S257667

5. Pelullo, C.P., Lombardi, C., Della Polla, G. et al. Assessment of knowledge, attitudes and behaviors related to self-medication practices among the adult population during the COVID-19 pandemic in Italy. Sci Rep., 2025; 15: 38197. https://doi.org/10.1038/s41598-025-22124-w
6. Zheng, Y., Tang, P. K., Hu, H., & Ung, C. O. L. Patterns of self-medication and intention to seek pharmacist guidance among older adults during the COVID-19 pandemic in Macao: a cross-sectional study. *BMC public health*, 2024; *24*(1): 2066. https://doi.org/10.1186/s12889-024-19453-2
7. Abuhamdah, S. M., & Naser, A. Y. Self-medication practice among the general public in Jordan: A cross-sectional study. *Frontiers in Public Health*, 2024; *12:* 1433464. https://doi.org/10.3389/fpubh.2024.1433464
8. Stephano, E. E., Lyimo, O. S., Godfrey, V. M., Shemdoe, S. G., James, M. E., Kingo, R. M., & E Ntwenya, J. Self-Medication Practice and Associated Factors Among Health Science Students in Central Tanzania. *The East African health research journal*, 2024; *8*(3): 402–408. https://doi.org/10.24248/eahrj.v8i3.810
9. Kassie, A. D., Bifftu, B. B., & Mekonnen, H. S. Self-medication practice and associated factors among adult household members in Meket district, Northeast Ethiopia, 2017. *BMC pharmacology & toxicology*, 2018; *19*(1): 15. https://doi.org/10.1186/s40360-018-0205-6
10. Alshogran, O. Y., Alzoubi, K. H., Khabour, O. F., & Farah, S. Patterns of self-medication among medical and nonmedical University students in Jordan. *Risk management and healthcare policy*, 2018; *11:* 169–176. https://doi.org/10.2147/RMHP.S170181