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Prevalence And Patterns of Self-Medication Practices among Residents of Salem Municipality, Tamil Nadu- A Cross-Sectional Study.

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Abstract

Background: Self-medication refers to the practice of using drugs to treat disorders or symptoms that individuals have diagnosed themselves or the ongoing or occasional use of a prescribed drug for chronic or recurring diseases or symptoms. Engaging in improper self-administration of medication results in the irrational utilization of medications and the emergence of drug resistance.**Objectives:** The study aimed to assess the prevalence and pattern of antibiotic self‑ medicationin Salem City Municipal Corporation, Tamilnadu. **Materials and Methods:** A community‑ based cross‑ sectional study was carried out in Salem City Municipal Corporation, Tamilnadu from May to July 2023. Data were collected from 370 adults by face‑ to‑ face interview using a Semi-structured questionnaire after obtaining consent. Data were entered in Excel and analysed using SPSS. Chi-Square was used to examine the association. **Results:**The prevalence of self‑ medication was found to be 33.8%. The most common symptoms treated were fever (77%), headache (72%), and cough/common cold (65%). The primary drugs used were antipyretics (69%), antibiotics (63%), and cough suppressants (56%). Reasons for self-medication were primarily driven by lack of time and convenience (75%), emergency use (61%), and perceived urgency of mild illness. There is a significant association between Self-medication and gender, Educational Status, and Marital status. ($P < 0.05$).**Conclusion:**Nearly one-third of theparticipants practiced self-medication. The increasing prevalence of self-medication necessitates being identified as a public health issue. Public health education and regulation of pharmacies can be effective in restricting self-medication practices. It is crucial to raise awareness about the hazards of self-medication to prevent adverse effects and the development of drug

Introduction:

Self-medication refers to the practice of using drugs to treat disorders or symptoms that individuals have diagnosed themselves or the occasional or ongoing use of a prescribed drug for chronic or recurring diseases or symptoms[1].It may involve the utilization of herbal products, thereuse of prescribed medications, or the direct use of prescription-only medications without medical consultation[2].Self-medication is a prevalent global practice in both developed and developing nations and may even surpass the use of prescribed medication in terms of frequency.

In developing nations such as India, the combination of readily accessible diverse pharmaceuticals and insufficient healthcare services leads to a higher prevalence of self-medication practices. Multiple studies indicate that self-medication can result in a postponement of seeking healthcare, which can subsequently lead to complications that may result in economic losses and endanger life[3]. Self-medication is a prevalent behavior that is impacted by factors such as knowledge of medications, financial limitations, and healthcare accessibility[4].

The main downsides of self-medication include the absence of a thorough assessment of the condition by a medical professional, potentially leading to misdiagnosis and delayed implementation of suitable treatments. Additionally, there is an elevated risk of drug toxicity due to overdosing and adverse interactions between medications[5].

In recent times, individuals have been greatly swayed by the media and the Internet, which encourages the adoption of self-medication practices. The heightened promotion of pharmaceuticals presents a greater risk of self-administration of medication among the younger demographic as a whole. These factors give rise to concerns regarding inaccurate self-diagnosis, potential drug interactions, and the misuse of medications for purposes other than their intended use. The proliferation of pharmaceuticals globally facilitates the availability of medication to consumers, thereby providing opportunities for its misuse[6].

Engaging in inappropriate self-medication results in the irrational utilization of medications. The act of self-medicating poses a significant risk to both an individual and society at large. Most drugs possess the capacity to induce side effects as a result of concealed active components and drug interactions. The utilization of antimicrobials, specifically, has resulted in the development of drug resistance, a significant global concern[7]. In this background, the present study was carried out to investigate the prevalence and practices of Self-medication in the Salem Municipality, Salem district in Tamil Nadu.

Materials and Methods

2.1. Study Design.

A community‑ based cross‑ sectional study was done in Salem that was conducted between May to July 2023among the residents of Salem Municipality, Salem district, Tamilnadu.

2.2 Sample Size and Sampling Technique

The sample size was calculated based on a previous study done in Chennai which reported a prevalence of self‑ medication as 32.5%[8]. The sample size (n) was determined using the equation of one proportion: [$n = Z^2 \, P \, (1-P)/d^2$], with the following assumptions: $Z = 1.96$ for a 95% confidence level, the prevalence of self-medication (P) $=0.32$ (32.5%), the margin of error (d) $= 0.05$ with 10% non-response rate, hence final sample size is 370.

A cluster sampling technique was adopted. Among the 60 wards in Salem municipality, 6 wards were selected using simple random sampling. In each ward, the first house was selected randomly and a total of 37 houses were selected systematically by visiting every 10th house. A single adult representative from each household was chosen at random and subsequently interviewed after obtaining their consent.

2.3. Instruments and Data Collection.

An English questionnaire was constructed following a literature review. Tamil is a native tongue of Tamilnadu. The questionnaire was translated into Tamil by a proficient translator, then translated back into English, and subsequently validated for consistency.Surveys were conducted after elucidating the objective of the study to the participants and procuring written informed consent from them. The study tool used was a semi-structured questionnaire that consisted of two parts: Part A consists of social and Demographic Questions and Part B consists of the practice of Self-medications like types of drugs used, treated symptoms, and source ofinformation about self-medication.

2.4 Statistical Analysis

The data were analyzed using SPSS software, version 23. Descriptive statistics were utilized to depict the characteristics of the sample and to describe the frequency, proportion, and mean of self-medication behaviors. The chi-square test was employed to determine a relationship between sociodemographic data and the practice of self-medication, as well as the resulting outcomes of self-medication and the specific drugs utilized.

2.5 Ethical Approval and Consent to Participate:

The study was approved by the Institutional and Ethical Committee and all necessary permissions were obtained before starting the study. The respondents were informed of the aim and objectives of the study and written informed consents were obtained from them before data collection. Participants were also informed that participation in the study was voluntary, and the data was assured to be anonymous and confidential.

Results

Sociodemographic characteristics of the participants

Our study analyzed the socio-demographic characteristics of 370 participants, distributed across various age groups, genders, educational levels, occupations, marital statuses, and health statuses regarding chronic diseases and self-medication behaviors. The age distribution reveals a higher concentration of participants in the middle age brackets, with 39.3% aged between 31 and 40, followed by 31.5% in the 18-30 age group, 30.0% in the 41-50 range, and slightly fewer in older age groups (29.6% for 51-60 and 6.7% for those above 60). This distribution suggests that the younger to middle-aged adult population was more accessible or more willing to participate in this study. Nearly 54.4% of participants were female, and 45.6% were male. This distribution provides a good basis for analyzinggender-based differences in the study outcomes. Nearly half of the participants (48.6%) had secondary education. Those with graduate and above degrees accounted for 35.3%, while 12.5% had only primary education, and 3.6% were illiterate. This varied educational background allows for an examination of how educational levels influence the study's primary variables.

Occupationally, the majority of participants were skilled workers (32.6%), followed by homemakers (26.9%), unskilled workers (23.2%), professionals (14.3%), and students (3.0%). This occupational diversity supports an analysis across different economic and social environments. Most of the participants were married (73.5%), with unmarried participants making up 22.3% and widowed only 4.2%. This aspect is crucial for understanding social support structures and their implications on the studied phenomena. The majority of participants (80.9%) did not suffer from chronic diseases, which could influence their health behaviors, including self-medication, reported by 33.8% of the cohort. Understanding the motivations for and implications of self-medication in the absence or presence of chronic conditions could be pivotal for health policy recommendations. (Table 1)

Association between Self-Medication and socio-demographic Factors

This study investigates the prevalence of self-medication among 370 participants and examines how this behavior correlates with various socio-demographic factors, such as age, gender, educational status, occupation, marital status, and the presence of chronic diseases.

Gender Differences: The data indicates a statistically significant difference in self-medication practices between genders ($p < 0.00001$). Males reported a higher incidence of self-medication (47.3%) compared to females (22.4%). This suggests that gender may play a critical role in health behavior patterns, potentially due to differences in health literacy, perception of illness, or access to medical care.

Educational Status: A notable difference in self-medication rates was observed across different educational levels ($p < 0.000001$). Participants with primary school education exhibited the highest self-medication rate (67.4%), followed by those who were illiterate (38.5%). Conversely, individuals with secondary education and graduate-level education were less likely to self-medicate, which could imply that higher educational attainment correlates with better awareness of the risks associated with self-medication.

Marital Status: Marital status also showed a significant association with self-medication practices ($p = 0.0001$). Widowed participants had the highest self-medication rate (62.5%), which might reflect coping mechanisms in response to bereavement or lack of support systems. Unmarried and married individuals had similar rates of self-medication (28.9% and 33.6%, respectively), suggesting that marital relationships might not strongly influence self-medication behaviors compared to other factors.

Chronic Disease Status: Individuals suffering from chronic diseases were significantly more likely to engage in self-medication (54.9%) compared to those without chronic conditions (28.8%) ($p = 0.0001$). This finding is crucial as it highlights the necessity for targeted educational programs to manage self-medication among chronically ill patients effectively.

Occupational and Age Groups: No significant differences were found in self-medication practices across different occupations ($p = 0.3108$) and age groups ($p = 0.7998$), indicating that these factors may not be primary determinants of self-medication behavior within this study population. (Table:2)

Self-medication practices

This study explored the self-medication practices among 125 participants, focusing on the symptoms treated, the types of drugs used, the reasons for self-medication, and the sources of medication information. The results indicated that the most common symptoms treated through self-medication included fever (77%), headache (72%), and cough/common cold

(65%). The primary drugs utilized were antipyretics (69%), antibiotics (63%), and cough suppressants (56%), highlighting a preference for managing common and acute symptoms.

Significantly, the reasons for self-medication were predominantly driven by lack of time (75%) and convenience (69%), followed by emergency use (61%) and perceptions of mild illness where a doctor's advice was deemed unnecessary (53%). These motivations suggest that accessibility and perceived urgency are critical factors influencing self-medication behaviors.

Regarding the sources from which individuals obtained information about medications, pharmacist consultation was the most common (65%), followed by reliance on prior prescriptions (59%) and advice from friends and relatives (50%). This indicates a mixed reliance on professional guidance and personal or informal sources, which may impact the appropriateness of the medications used and the risk of potential medication errors or adverse effects. (Table:3)

Discussion:

In our study, the prevalence of self- medication was found to be 33.8%. A Systematic Literature Review and Meta-Analysis revealed that the pooled prevalence of self-medication was 53.57%[9]. A Study conducted in sub-urban areas near Chennai revealed overall prevalence of self-medication was found to be 32.5%[8] which was similar to our study findings. Khushboo Juneja's[10] study examined the urban and rural catchment areas of Uttar Pradesh and found that the prevalence of self-medication use was 66.4%.

The findings from our study regarding the socio-demographic characteristics influencing self-medication behaviours show notable alignment and deviations from existing literature. The observed gender difference in self-medication, with males exhibiting a higher incidence than females, diverges from some studies that report higher self-medication among females due to their generally greater health-seeking behaviour[11]. Nevertheless, our findings are supported by research suggesting that males may not fully utilize professional healthcare services, instead choosing self-directed treatment approaches[12].

Educational status played a significant role in self-medication practices; individuals with lower educational levels self-medicated more frequently. This is consistent with findings several research findings[3,13] that suggested that lower educational attainment might be associated with reduced awareness of the risks associated with unsupervised medication use. Our study further enriches this perspective by highlighting a dramatic gradient in self-

medication across educational levels, suggesting that educational interventions could be a focal point in reducing unsafe self-medication practices.

The significant association between marital status and self-medication, especially among widowed individuals, underscores the impact of social support systems on health behaviors, as proposed by A. O. Afolabi et al[14]. This finding suggests that the loss of a partner may lead to increased reliance on self-medication as a coping mechanism.

Regarding chronic disease status, our study aligns with global research underscoring that individuals with chronic diseases are more likely to self-medicate, possibly due to routine management of ongoing symptoms[15].This pattern emphasizes the need for healthcare providers to closely monitor and guide self-medication practices among chronically ill patients to prevent adverse outcomes.

Contrary to several studies that suggest significant variations in self-medication practices across different occupational groups and age categories[10,16]and our findings did not demonstrate any substantial differences based on these factors. This discrepancy might be attributed to the specific socio-economic and cultural contexts of our study population, suggesting that local environmental and social factors could play crucial roles in influencing self-medication behaviors.

Our results indicating common self-medication for acute symptoms like fever, headache, and the common cold are in line with global trends where self-medication is predominantly aimed at managing non-severe symptoms [4,10]. The predominant use of antipyretics, antibiotics, and cough suppressants also reflects a common pattern observed worldwide,[10,17,18] although the high usage of antibiotics raises concerns about antibiotic resistance, echoing the cautions by the World Health Organization.

The motivations for self-medication—predominantly convenience and lack of time—are consistent with similar findings that suggest ease of access and time constraints as primary drivers[3]. However, our study adds a nuanced understanding of emergency use and perceptions of illness severity, which are less commonly explored factors.

The reliance on pharmacists and prior prescriptions for medication information noted in our study aligns with trends observed in healthcare settings emphasizing the critical role of pharmacists in guiding safe self-medication practices[10,14]. However, the substantial reliance on advice from friends and relatives raises concerns about the potential for misinformation and the need for improved public health education.

Conclusion:

Our study underscores the necessity for targeted educational programs and health policy adjustments to address the varied motivations and demographic factors influencing self-medication. Future research should explore interventional strategies that tailor health education based on socio-demographic profiles and develop robust systems for monitoring and guiding self-medication practices, especially in populations with high risk of adverse drug interactions and those with chronic conditions. Further investigation into the impacts of occupational and age-related influences on self-medication in different cultural contexts would also provide valuable insights for global health policy adaptations.

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Tables

Table 1: Sociodemographic characteristics of the participants

SOCIO-DEMOGRAPHIC FACTORS	FREQUENCY	PERCENTAGE
AGE		
18-30	85	31.5
31-40	106	39.3
41-50	81	30.0
51-60	80	29.6
>60	18	6.7
GENDER		
Male	169	45.6
Female	201	54.4
EDUCATIONAL STATUS		
Illiterate	13	3.6
Primary school	46	12.5
Secondary school	180	48.6
Graduate and above	131	35.3
OCCUPATION		
Student	11	3
Skilled	121	32.6
Unskilled	86	23.2
Homemaker	99	26.9
Professional	53	14.3
Marital status		
Unmarried	83	22.3
Married	271	73.5
Widowed	16	4.2
Suffering from chronic disease		
Yes	71	19.1
No	299	80.9
Self-Medication		
Yes	125	33.8
No	245	66.2

Table 2: Association between Self-Medication and Socio-demographic factors.

SOCIO-DEMOGRAPHIC FACTORS	Yes (N=125)		No (N=245)		P-Value
AGE	n	%	n	%	
18-30	27	31.8	58	68.2	
31-40	34	32.1	72	67.9	
41-50	30	37.0	51	63.0	0.7998
51-60	26	32.5	54	67.5	
>60	8	44.4	10	55.6	
GENDER					
Male	80	47.3	89	52.7	**0.00001**
Female	45	22.4	156	77.6	
EDUCATIONAL STATUS					
Illiterate	5	38.5	8	61.5	
Primary school	31	67.4	15	32.6	
Secondary school	44	24.4	136	75.6	**0.000001**
Graduate and above	45	34.4	86	65.6	
OCCUPATION					
Student	5	45.5	6	54.5	
Skilled	36	29.8	85	70.2	
Unskilled	36	41.9	50	58.1	0.3108
Homemaker	33	33.3	66	66.7	
Professional	15	28.3	38	71.7	
Marital status					
Unmarried	24	28.9	56	67.5	
Married	91	33.6	183	67.5	**0.0001**
Widowed	10	62.5	6	37.5	
Suffering from chronic disease					
Yes	39	54.9	42	59.2	**0.0001**
No	86	28.8	203	67.9	

Table 3: Self-medication practices

Practices (N=125)	Frequency	Percentage
Symptoms reported for Self-medication		
Fever	96	77
Headache	90	72
Cough/Common Cold	81	65
Body ache	68	54
Gastritis/Dyspepsia	41	33

Diarrhea	26	21
Others	8	6
Drugs used by the respondents for self-medication		
Antipyretics	86	69
Antibiotic	79	63
Cough suppressants	70	56
Antihistamines	61	49
Multivitamin	56	45
Laxatives	51	41
Herbals	43	34
Sleeping pills	28	22
Reasons for self-medication		
Lack of time	94	75
Convenience	86	69
Emergency use	76	61
Mild illness/Doctor's advice not needed	66	53
Distance to Healthcare facilities	53	42
Financial constraints	38	30
Source of information about medications		
Pharmacist consultation	81	65
Prior prescriptions of my own	74	59
Friends and relatives	63	50
Internet	54	43
Advertisements	50	40