

Original Article

# Knowledge, attitude, and prevention of self-medication practices among the general population of Gujarat

Hital Shah<sup>1</sup>, Bhoomi Arora<sup>2</sup>

Departments of <sup>1</sup>Pharmacology and <sup>2</sup>Pharmacy Practice, SAL Institute of Pharmacy, Ahmedabad, Gujarat, India.

## ABSTRACT

**Objectives:** The practice of self-medication (SM) without consulting a health-care professional among the populace of both developed and developing countries like India may lead to a delay in therapeutic effectiveness. The present study was conducted to assess the knowledge, attitude, and practice of SM among the general population of Gujarat.

**Material and Methods:** An observational, cross-sectional questionnaire-based study was conducted among 488 participants between April 2021 and May 2021 to evaluate the several aspects of SM. In April 2021, this study was conducted on both the genders of 18–80 years of urban and rural areas of Gujarat. Data were analyzed for descriptive statistics. The data presented in the form of percentages using tables and figures. The responses were collected and analyzed using GraphPad v.8 and Microsoft Excel for percentage and statistical significance.

**Results:** Prevalence of SM was 78.3%. It was found to be practiced more among the younger age group (55.32%) than the older. Graduates practiced SM more than the others ( $P < 0.004$ ). Significant association was found between its practice and residency ( $P < 0.03$ ), marital status ( $P < 0.003$ ), education ( $P < 0.004$ ), and occupation ( $P < 0.0007$ ). Fever, cough, and cold were the most common conditions noted for SM practice followed by headache. It was noticed that 63.5% participants were procured medications from pharmacy. Multivitamins, nonsteroidal anti-inflammatory drugs, and antibiotics were the most frequent medications used by participants.

**Conclusion:** The prevalence of SM is alarming which causes serious health issues and needs an intervention. Planning of health awareness programs, educating people, and pharmacists are necessary for promoting rational use of medication.

**Keywords:** Self-medication, Old prescription, Pharmacy, Gujarat

## INTRODUCTION

Self-medication (SM) is one of the most preferred approaches avails by patients. Use of medication either modern or traditional, for self-treatment without the advice of a physician for diagnosis, prescription, or surveillance of treatment is considered as SM.<sup>[1]</sup> Continuous practices of SM in urban and rural populations including developed or devolving countries together with India may lead to delay in prevention of disease due to inappropriate treatment.

The World Health Organization also has pointed out that responsible SM can help to prevent and treat ailments that do not require medical consultation and can provide a cheaper alternative for treating common illnesses.<sup>[1-3]</sup> However, it is mainly recognized by appropriate health information. Due to digitalization, practicing of non-prescription drugs among

college students as well as the general population is increased which leads to levitation the concern of inappropriate diagnosis and serious drug reaction as well.<sup>[4,5]</sup> On the other side, if SM is practiced properly, it may act as a positive outcome for the treatment of acute illness with time and money-saving. Thus, the growing trend of self-care has its positive and negative aspects.

To our available knowledge, only a few studies have been conducted at the communal level in India or even in Gujarat at present to evaluate the extent and factors associated with SM practices. Such kinds of studies will helpful for regulatory authorities to streamline the process for procurement of essential medicines and their associated regulatory actions. With this background, the present study was conducted to assess the prevalence of SM practices, probable determinants for such practices, types of medications used, and sources of advice for SM among the general population of Gujarat.

\*Corresponding author: Hital Shah, Department of Pharmacology, SAL Institute of Pharmacy, Ahmedabad, Gujarat, India. [hitalshah2990@gmail.com](mailto:hitalshah2990@gmail.com)

Received: 20 July 2021 Accepted: 25 October 2021 EPub Ahead of Print: 22 November 2021 Published: 11 May 2022 DOI 10.25259/IJMS\_354\_2021

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## MATERIAL AND METHODS

An observational, cross-sectional study was conducted from April 2021 to May 2021 in the general population of Gujarat covering both rural and urban areas between the age of 18 and 80. Structured pre-validated questionnaires were prepared and distributed through a Google Forms link to collect feedback from participants. The study protocol has been approved by the ethical committee of SAL Hospital before commencement. The prior written consent form was obtained from the study participants. To increase the response rate, B. Pharm final year students were trained who had visited the various places to collect the data. The collected data were supervised by investigators on daily basis. Data on demographic details (age, gender, income, marital status, education, occupation, religion, and location), the practice of SM, and prevention of SM were collected.

Participants who have reported the classes of drugs consumed by them as SM, harm caused due to SM were further probed for their attitude regarding the SM.

### Statistical analysis

The collected data were reported as a percentage. Various determinants of SM practice were analyzed using the Chi-square test with the help of GraphPad Prism V.8. The data  $P < 0.05$  were considered statistically significant.

## RESULTS

The present study was carried out among 488 respondents, of which 259 (53.1%) were male and 229 (46.9%) were female. The majority of the participants belonged to the 18–30 years of age group, out of them, 59.6% were from urban and 40.4% from rural areas ( $P < 0.035$ ). The mean age group of the participants was  $33.07 \pm 0.60$  years ranging from 18 to 70 years. Among these 488 participants, 232 (47.5%) were single while 229 (46.9%) were married ( $P < 0.003$ ). More than half of the respondents have finished graduation ( $n = 278$ , 57%,  $P < 0.004$ ) whereas only a small proportion of respondents were illiterate and had primary education. A large proportion of participants were students ( $n = 176$ , 36.1%) following private employee ( $n = 104$ , 21.3%) and self-employed ( $n = 97$ , 19.9%) with  $P < 0.0007$ . Nearly half of the respondents had a monthly income of more than 7533 rs whereas one-third of the respondents ( $n = 181$ , 37.1%) claimed less than 1129 rs of monthly income, of which the majority were the students. In regard to practicing SM, out of 488 participants, the prevalence of SM was 78.3% ( $n = 383$ ). Factors such as marital status, education, occupation, and location were found to be associated with SM [Table 1].

On inquiring about the frequency of SM, closely half of the respondents ( $n = 231$ , 47.3%) said they self-medicate rarely, whereas the weekly frequency of SM was reported

by 84 (17.2%) respondents. A significantly large percentage of participants ( $n = 402$ , 82.4%) denied having any chronic medical condition.

The most common symptoms for which SM had been practice was cough and cold ( $n = 313$ , 64.1%) following for fever ( $n = 292$ , 59.8%) and headache ( $n = 273$ , 55.9%). SM for urinary tract infection ( $n = 25$ , 5.1%) was least claimed. Among all the medications, antibiotics ( $n = 283$ , 58.5%) were the most self-medicated drugs among all following vitamins and minerals ( $n = 268$ , 55.4%). “Previous experience of treating a similar illness” ( $n = 178$ , 36.8%) and “no time for hospital visit” ( $n = 175$ , 36.2%) were the most frequently reported cause for the SM.

More than half of the respondents stated pharmacist or pharmacy store ( $n = 257$ , 53.1%) as the most influencing factor responsible for SM compared to self-knowledge (40.7%), internet (37.6%), or media (16.5%).

Seeking help of the pharmacist ( $n = 310$ , 63.5%) by asking the symptoms was noted the major source for procurement of drugs followed by friends/family members ( $n = 96$ , 19.7%), unused medicines at home ( $n = 51$ , 10.5%), and free physicians' sample ( $n = 31$ , 6.4%) [Figure 1].

Among the self-medicators, half ( $n = 239$ , 49%) of them stated that they always read prescribing information or package inserts before self-medicating whereas 27% of them have denied. Of all 488 respondents, 204 (41.8%) reported they fully understood the instructions given in the prescription or package inserts, following 31.6% partially understood while 26.6% did not understand at all. The majority of the self-medicators specified that they take into consideration a pharmaceutical company before SM.

When asked about the SM of antimicrobial agents in the past 6 months, more than half of the consumers stated azithromycin ( $n = 261$ , 53.5%) [Figure 2]. More than half of the self-medicators were aware of the expiry date of medicines whereas one-third of all knew about adverse drug reactions ( $n = 209$ , 42.8%) and dosage of medicines ( $n = 195$ , 40%) they consume.

On inquiring, the major reason to avoid SM practice was the risk of using wrong drugs ( $n = 206$ , 42.2%) followed by risk of adverse effects ( $n = 151$ , 30.9%). “Preventing the supply of medicines without prescription” and “awareness and education regarding the implication of SM s” were the most frequently stated steps to prevent SM by the majority of the respondents ( $n = 137$ , 28.1% and  $n = 133$ , 27.3%, respectively).

## DISCUSSION

The prevalence of SM has remained common in both developed and developing regions and this trend is increasing

**Table 1:** Demographic characteristics of the respondents (n=488).

Variables and categories	N	%	Use of self-medication		Chi-square	P-value
			Yes (%) 383 (78.5)	No (%) 105 (21.5)		
Gender						
Male	259	53.1	198 (76.44)	61 (23.55)	1.354	0.244
Female	229	46.9	185 (80.78)	44 (19.21)		
Age					7.941	0.093
18–30	270	55.32	201 (74.44)	69 (25.55)		
31–40	74	15.16	63 (85.13)	11 (14.86)		
41–50	69	14.13	56 (81.15)	13 (18.84)		
51–60	65	13.31	53 (81.53)	12 (18.46)		
61–70	10	2.04	10 (100)	0		
Marital status					13.66	0.003**
Single	232	47.5	168 (72.41)	64 (27.58)		
Married	229	46.9	194 (84.71)	35 (15.28)		
Divorced	19	3.9	13 (68.42)	6 (31.57)		
Widowed	8	1.6	8 (100)	0		
Education					15.15	0.004**
Illiterate	15	3.1	15 (100)	0		
Primary	21	4.3	21 (100)	0		
Secondary	109	22.3	80 (73.39)	29 (26.60)		
Graduate	278	57	222 (79.85)	56 (20.14)		
Postgraduate	65	13.3	45 (69.23)	20 (30.76)		
Occupation					19.11	0.0007***
Self-employed	97	19.9	79 (81.44)	18 (18.55)		
Government employee	29	5.9	27 (93.10)	2 (6.89)		
Private employee	104	21.3	76 (73.07)	28 (26.92)		
Housewife	82	16.8	75 (91.46)	7 (8.53)		
Student	176	36.1	126 (71.59)	50 (28.40)		
Income per month					5.740	0.219
7533 and above	202	41.4	148 (73.26)	54 (26.73)		
3766–7532	51	10.5	43 (84.31)	8 (15.68)		
2260–3765	26	5.3	21 (80.76)	5 (19.23)		
1130–2259	28	5.7	23 (82.14)	5 (17.85)		
1129 and below	181	37.1	148 (81.76)	33 (18.23)		
Religion					3.269	0.195
Hindu	467	95.7	369 (79.01)	98 (20.98)		
Muslim	19	3.9	12 (63.15)	7 (36.84)		
Others	2	0.40	2 (100)	0		
Location					4.442	0.035*
Urban	291	59.6	219 (75.25)	72 (24.74)		
Rural	197	40.4	164 (83.24)	33 (16.75)		

\*Indicates  $P < 0.05$ , \*\*indicates  $P < 0.01$ , and \*\*\*indicates  $P < 0.001$

among young generations. Economic factors, lifestyles, easy availability of medications, financial constrain, lack of nearby access to hospitals, and increase consultation fees are the leading reasons for people seeking SM.

The current study presents 70.3% of participants were literate.

In this study, we have observed that participants are also practicing SM for the management of chronic conditions such as diabetes and hypertension by showing old prescriptions or remembering the name of medication without consulting the clinicians. Athira *et al.* reported similar results in June 2020 which was conducted in rural villages of Yelahanka.

Antibiotics, nonsteroidal anti-inflammatory drugs, anti-diarrheal, and multivitamins were the most common allopathic medications used for SM in this study. These findings were similar to other studies conducted in rural areas of North India.<sup>[1]</sup>

The prevalence of SM in this study was 78.5% with a significantly higher prevalence. Our finding was in accordance with the study conducted in Delhi, which has shown 92.8% of SM.<sup>[6]</sup> Moreover, few studies have been conducted among college-going medical students and surprisingly, the prevalence of self-medication is highly significant in them. It was found to be 71.7% in the private

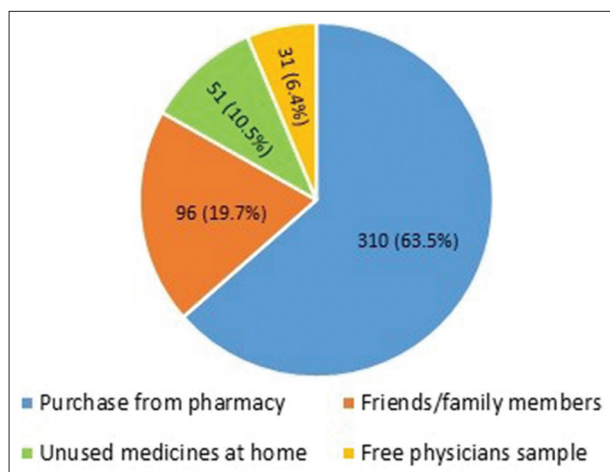


Figure 1: Sources used to procure medicines.

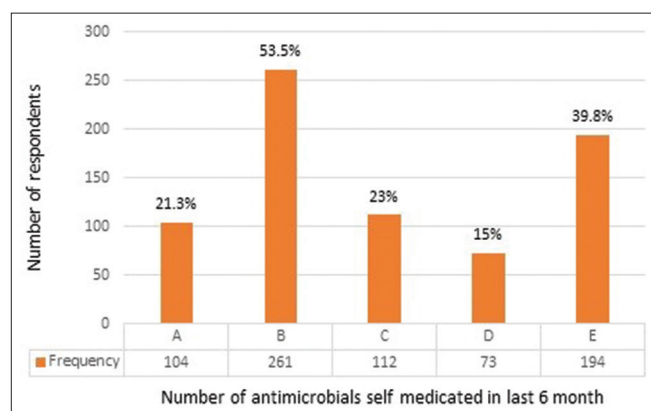


Figure 2: Number of antimicrobials self-medicated in the past 6 months A – Amoxicillin, B – Azithromycin, C– Chloroquine, D – Cefadroxil, E – Other.

medical institute of Nagpur,<sup>[2]</sup> 96% in the 2<sup>nd</sup> year medical students of Telangana state.<sup>[7]</sup> Insufficient knowledge of medicines including their uses and adverse effects among people may put them at risk of developing serious medicine-induced illness.

The current study as well as the study of Delhi reported “previous experience of treating similar illness” as the most frequent reason for SM. The present study reflects a causal behavior and repeated use of old prescriptions. Storage of medications at home with free access and easy handling is a risk factor for SM. Receiving advice from the pharmacy drug store (53.3%) and family (33.6%) with the usage of old prescriptions is the major contributory factors for SM as a home pharmacy. This indicates that easy ease of SM is due to increase inherent acceptance.

In this study, procuring drugs from the pharmacist by showing the previous prescription or remembering the

previous drugs prescribed were noted as the most common mode of procuring drugs by self-medicators. Same results were presented by Selvaraj *et al.*<sup>[8]</sup> and Kasulkar and Gupta. The possible reason explaining this may be easy accessibility, do not need a prescription for most of the drugs, and previous relief from the ailments by the drugs bought from the pharmacy store.

On enquiring the study subjects about awareness of SM practice, the participants were well aware of the expiry date of medicines, adverse drug reactions, and dosage of medicines. Our finding found similar to other findings of the studies carried out in Tamil Nadu and Nagpur.<sup>[2,5]</sup> This finding may be because the majority of the self-medicators in this study had graduate or postgraduate degree which made them read the prescribing information or package labels and also helped them to understand it fully or partially.

Azithromycin was the most self-medicated antimicrobial reported in the past 6 months in this study. This may be due to the pandemic of COVID-19, which has increased in the number of Google searches since the pandemic has started. One study reported that one in five respondents consumed azithromycin without having any respiratory symptom, as a preventive measure just with the thought they would have COVID-19.<sup>[9]</sup> This global trend has caused tremendous medical challenges including a high risk of improper dosage, adverse drug reactions, and increased prevalence of pathogenic resistance to antimicrobials.

## CONCLUSION

SM is found to be an obvious and at the alarming stage at 78.5% in this study. We are on the edge of sword for promoting SM as it has its pros and cons. Hence, a comprehensive approach has to be initiated by arranging the awareness program regarding SM and strictness in promoting unnecessary pharmaceutical advertisements. Educating people by improving their knowledge and understanding for rational use of SM will help in limiting the hazardous event issue in the future.

## Acknowledgment

The authors of this study are highly grateful to Patel Drashti, Nayak Jasal, Patel Jenny, Patel Maharshi, and Modi Umang, the students of final year B. Pharm for their support and involvement for the completion of the study.

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent.

### Financial support and sponsorship

Nil.

### Conflicts of interest

There are no conflicts of interest.

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**How to cite this article:** Shah H, Arora B. Knowledge, attitude, and prevention of self-medication practices among the general population of Gujarat. *Indian J Med Sci* 2022;74:22-6.