Journal of Health Promotion and Behavior (2023), 8(4): 269-277
Masters Program in Public Health, Universitas Sebelas Maret

Original article
Open Access

Estimation of Self-Medication and Associated Factors among Urban General Population in Part of Saurashtra Region of Gujarat, India

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Received: 16 February 2023; Accepted: 09 March 2023; Available online: 16 October 2023

ABSTRACT

Background: Self-medication is a universal phenomenon and is practiced globally with varied frequency. In several studies, it has been found that the potential disadvantage of self-medication is a waste of resources, increased resistance to pathogens, and causes serious health hazards such as adverse reactions and prolonged suffering. This study aimed to estimate the practice and factors associated with self-medication among the urban general population.
Subjects and Method: This community based cross-sectional study was conducted among general population of Amreli city, Gujarat, India from February to November 2022. A total of 110 subjects were include in this study. The dependent variable is self-medication practice. The independent variables are education, occupation, economic class. Data were collected by face-to-face interview using a semi-structured questionnaire with a recall period of 6 months' experiences in 110 houses. Statistical analysis was done using Jamovi software.
Results: Upper socio-economic class (OR= 1.74; 95% CI= 1.05 to 2.90; p= 0.031), highly educated (OR= 0.58; 95% CI= 0.41 to 0.83; p= 0.003) more likely to do self-medication than the lower socio-economic class and low education.
Conclusion: Upper socio-economic and high education improve self-medication.

Keywords: Self-medication, urban, reasons, adverse effects.

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Cite this as:
Savani N, Kansagara T, Chauhan M, Gurjar YJ (2023). Estimation of Self-Medication and Associated Factors among Urban General Population in Part of Saurashtra Region of Gujarat, India. J Health Promot Behav. 8(4): 269-277. https://doi.org/10.26911/thejhpb.2023.08.04.04.

BACKGROUND

As per World Health Organization (WHO), self-medication is the selection and use of medicines by individuals to treat self-recognized illnesses or symptoms. Self-medication forms an integral part of self-care which can be defined as a primary public health resource in the health care system (WHO, 1998; WHO, 2000). Self-medication is a universal phenomenon and is practiced globally with varied frequency (Abahussain et al., 2005). The prevalence of self-medication practice in India ranges between 8.3% to 92% with a mean preva-

lence of 53.57%. Familiarity with medication appears to be a major reason to practice self-medication (Rashid et al., 2019). People tend to practice self-medication as it cut down health care costs. Advertisements on media and the internet are the major reason behind the increase in self-medication practice. Generally, medicine is suggested by a relative, friend, chemist, previously prescribed drug and advertisement which are common sources (Bennadi, 2014; Verma et al., 2010; Joshi et al., 2011; Sharma et al., 2005)

In a developing country like India, the easy availability of a wide range of drugs coupled with inadequate health services result in an increased proportion of self-medication (Abahussain et al., 2005) In several studies, it has been found that the potential disadvantage of self-medication is a waste of resources, increased resistance to pathogens, and causes serious health hazards such as adverse reactions and prolonged suffering. The development of antimicrobial resistance following antimicrobial agents is an undesirable outcome associated with self-medication. So, there is needed to be a check on these practices (WHO, 2000; Bennadi, 2014; Kayalvizhi & Senapathi, 2007)

There is no research conducted to reveal the extent pattern of self-medication practice in the study area. Therefore, this research may show the magnitude of the problem show as to initiate intervention by the concerned authority and community as well. Thus, this study aimed to estimate the practice and factors associated with self-medication among the urban general population in Amreli city.

SUBJECTS AND METHOD

1. Study Design

This was a community-based cross-sectional study conducted among the general population in an urban area of Amreli city, Gujarat, India from February-November 2022.

2. Population and Sample

A total of 110 houses were purposively selected for the study. The first house was randomly selected, and the selection of subsequent houses was continuous. This was done based on the availability and consent of family members. One eligible person per household was considered as part of the study.

3. Study Variables

The dependent variable was self-medication practice. The independent variables were age, gender, education, occupation, marital status, and socio-economic class.

4. Operational Definition of Variables

Self-Medication as per WHO, self-medication was defined as “use of pharmaceutical or medicinal products by the consumer to treat self-recognized disorders or symptoms, the intermittent or continued use of a medication previously prescribed by a physician for chronic or recurring disease or symptom, or the use of medication recommended by lay sources or health workers not entitled to prescribe medicine.

Age was all people aged 18 years and above, a permanent resident of Amreli and willing to give informed consent were consider as eligible participate in the study.

Gender was categorized into male or female.

Education was education more than higher secondary were considered as high educated and other were consider as less educated.

Occupation was categorized into business, service/job, housewife, student, and agriculture work or labor.

Marital status was included weather someone is married, unmarried, and divorced/separated/widow.

Socio-economic classification (SEC) was done on the basis of modified B.G. Prasad's classification (updated-2022). SEC-I & II was consider as upper socio-economic class and SEC-III, IV, and V was considering as lower socio-economic class.

5. Study Instruments

Data were collected by face-to-face interview using a semi-structured questionnaire with a recall period of 6 months. A questionnaire was developed from by reviewing different works of literature. The questionnaire contains two sections, first for socio-demographic details of respondents and second for questions related to self-medication (like indications, reasons, sources, drugs used and adverse effects after self-medication). After the data collection, each family was taught about different adverse aspects of self-medication practices with the use of materials e.g., pamphlets, charts, photographs, etc.to improve the knowledge of people on adverse drug reactions and drug resistance.

6. Data Analysis

The data was entered in Microsoft excel sheet-2016 and descriptive analysis was done by using Jamovi software.10 Descriptive statistics are represented with mean, standard deviation, frequency, and percentages. A chi square or Fisher exact test followed by binary logistic regression was applied to measure the associations. A calculated P value < 0.05 was considered statistically significant.

7. Research Ethics

Ethical approval for this study was obtained from the ethics committee of institute (IEC/20/6/22).

RESULTS

1. Sample Characteristic

In this study, the prevalence of self-medication practices among respondents was found to be 66 (60%) (Figure 1).

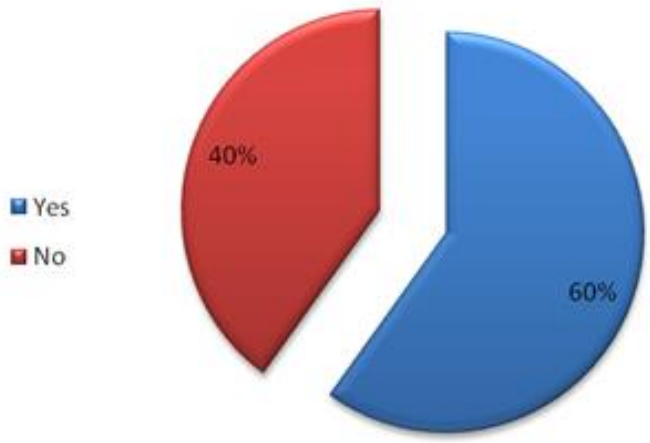

Figure 1. Prevalence of Self-medication

Table 1 showed among those practiceing self-medication, higher proportions were age groups between 30-60years (72%), males 35 (53.03%), mean age was 45 ± 12.36 years, and 57 (86.36%) respondents were married. As for education level, 56 respondents (84.84%) had 10th or higher and used self-medication. Respondents who had service 24 (36.36%) were practiceing self-medication followed by a businessperson 17 (25.76%) and housewives 16 (24.24%). Self-medication practice was higher in SEC-I (57.58%) and SEC-II (28.79%). A significant association was

found between self-medication practices and education (p=0.000), occupation (p= 0.008), and socio-economic class (p= 0.001). There was no significant association between age groups, gender, and marital status with self-medication practices in this study.

Table 1. Socio-demographic variables of respondents.

Variables	Categories	Self-medication						p
		Yes		No		Total		
		n	%	n	%	n	%	
Age Group (years)	<30	9	13.6	7	9.09	13	11.8	0.856
	30-45	24	36.3	19	43.1	43	39.0	
	46-60	24	36.3	15	34.0	39	35.4	
	>60	9	13.6	6	13.6	15	13.6	
Gender	Male	35	53.0	27	61.3	62	56.3	0.388
	Female	31	46.9	17	38.6	48	43.6	
Education	Illiterate	3	4.55	1	2.27	4	3.64	< 0.001
	Primary	3	4.55	19	20.4	12	10.9	
	secondary	4	6.06	11	25.0	15	13.6	
	higher secondary	22	33.3	12	27.2	34	30.9	
	undergraduate	17	25.7	10	22.7	27	24.5	
	≥graduate	17	25.7	1	2.27	18	16.3	
Occupation	Business	17	25.7	18	40.9	35	31.8	0.008
	Service/Job	24	36.3	4	9.09	28	25.4	
	Housewife	16	24.2	14	31.8	30	27.2	
	Student	4	6.06	1	2.27	5	4.55	
	Agriculture work/labour	5	7.58	7	15.9	12	10.9	
Marital status	Married	57	86.3	36	81.8	93	84.5	0.604
	Unmarried	8	12.1	6	13.6	14	12.7	
	Separated/Divorced/widow	1	1.52	2	4.55	3	2.73	
SEC#	I	38	57.5	12	27.2	50	45.4	0.001
	III	19	28.7	24	54.5	43	39.0	
	III	8	12.1	3	6.82	11	10	
	IV	1	1.52	1	2.27	2	1.82	
	V	0	0	4	9.09	4	3.64	

Table 2. Self-medication practice among respondents in Amreli City

Variables	Categories	n	%
Indications	Headache	22	33.8
	Fever	49	75.4
	Acidity /stomachache	15	23.1
	Cold	30	46.2
	Cough	28	43.1
	Sore throat	18	27.7
	Diarrhoea	6	9.2
	Infections	1	1.5
	Other	21	31.81
Reasons	Illness was minor or not serious	37	57.8
	Cheap	27	42.2
	Time saving	33	51.6
	Embarrassed of discussing own symptoms	5	7.8
	Greater choice of treatment	2	3.1
	Suggestions from friends and relatives	19	29.7

Variables	Categories	n	%
	Influence/ mass media/ internet/ advertisement	7	10.9
	Fewer crowd at pharmacy	16	25
	Convenient	33	51.6
	Quick relief	10	15.6
Source of information	Books	1	1.6
	Doctor's past prescription	29	45.3
	Chemist	37	57.8
	Internet	7	10.9
	Advertisement	3	4.7
	Family members or friends	19	29.7
Drug Used	Antipyretics	45	68.18
	Cough/cold remedies	35	53.03
	Analgesics	19	28.79
	Antacids/Antiemetic	27	40.91
	Antibiotics	12	18.18
	Others (Laxatives, loperamide, ORS)	11	16.67
	Probiotics	7	10.61
Adverse effects	Yes	36	32.72
	No	74	67.28

Table 2 showed depicted the self-medication practices among respondents. The most common indications for which self-medication did were fever (75.4%) followed by cold (46.2%), Cough (43.1%), headache (33.8%), sore throat (27.7%), acidity/ stomachache (23.1%), diarrhea (9.2%) and others like menstrual cramps, joint pain, body ache (31.81%). In this study, illness was minor or not serious (57.8%), convenient (51.6%), Timesaving (51.6%), and cheap (42.2%) were the major reasons for self-medication. The main source of self-medication was a pharmacists/chemist (57.8%) followed by previous prescription (45.3%) & Family members or friends (29.7%). Antipyretics were commonly (68.18%) self-medicated drugs, followed by cough/cold remedies (53.03%), antacids/ antiemetics (40.91%), and analgesics (28.79%). Respondents who had adverse effects after taking self-medicated drugs were 36 (32.72%).

2. Bivariate Analysis

Below the results of bivariate analysis. Table 3 showed respondents from upper socio-economic class were 1.74 times more likely (OR= 1.74; 95% CI= 1.05 to 2.90; p= 0.031,) to self-medicate than their lower socio-economic class counterparts. High educated respondents were less likely (OR= 0.58; 95% CI= 0.41 to 0.83; p= 0.003) to self-medicate as compared to less educated. There was not statistically significant association between self-medication and occupation.

Table 3. Binary logistic regression analysis of self-medication practices among respondents

Variables	OR	95% CI		p
		Lower Limit	Upper Limit	
Education	0.58	0.41	0.83	0.003
Occupation	0.75	0.52	1.08	0.128
Socio-economic class	1.74	1.05	2.90	0.031

DISCUSSION

In this present study, the prevalence of self-medication among the urban general population in Amreli, Gujarat state of India was found to be 60% while compared with a study done in urban Delhi (Kumar et al., 2015) (92.8%) and Ahmedabad, Gujarat (Patel et al., 2013) (88%), Pune (Sajith et al., 2017) (87.5%), Turkey (Okyay & Erdoğan, 2017) (63.4%), Sri Lankan (Fernando et al., 2017) (60.8%), showed that prevalence of self-medication was higher than our study. On but another side present study report was higher than studies done in Puducherry (Selvaraj et al., 2014) (11.9%), Karnataka et al., 2017) (47%), the western part of India (Limaye et al., 2018) (51.5%), Meket district (Kassie et al., 2018) (35.9%), Mbeya, Tanzania (Kajeguka & Moses, 2017) (55.7%), Nepal (Paudel & Aryal, 2020) (38.2%), and Gondar town, northeast Ethiopia (Jember et al., 2019) (52.2%). This difference may be due to socio-demographic factors, selection of study population, sample size, and recall periods.

In our study, self-medication proportions were more seen in age groups between 30-60 years (72%), among male respondents (53.03%), and married (86.36%). A similar result was found in Puducherry (Selvaraj et al., 2014; Karnataka et al., 2017), which reported male and middle age groups were more to be self-medication practices while studies done at Delhi (Kumar et al., 2015), reported that self-medication practices were more in younger age groups and male respondents. A study done in Gondar town, northeast Ethiopia (Jember et al., 2019) reported self-medication was more found among aged 30–45 years, unmarried and female respondents.

In the present study, people with higher education 10th and above (84.84%), better service/job (36.36%), and upper socio-economic class (SEC-I=57.58%) tend to be more prevalent. Our study report also indicated that the odds of self-medication practices among upper socio-economic status were 1.748 times higher when compared with their other status (Table 3). A similar finding reported in a study done in Delhi (Kumar et al., 2015) and the western part of India (Limaye et al., 2018) showed that self-medication prevalence was higher among the educated, better jobs and higher income, and better socio-economic status. But studies done at Puducherry (Selvaraj et al., 2014; Karnataka et al., 2017), & Gondar town-northeast Ethiopia (Jember et al., 2019) showed self-medication was more prevalent among illiterate, low income, and lower socio-economic status.

The present study found that the most common indications for self-medication were found to be fever (75.4%) followed by cold (46.2%), Cough (43.1%), and headache (33.8%). A similarly, the majority studies reported that fever, cough/cold and aches (body ache/headache) were most common indications for self-medication. (Kumar et al., 2015; Selvaraj et al., 2014; Karnataka et al., 2017; Jember et al., 2019; Pandya et al., 2013). Antipyretics and cough/cold remedies were the most commonly used drugs in this study, which was similar to a study done in Ahmadabad (Patel et al., 2013), Delhi (Kumar et al., 2015), and Sri Lankan (Fernando et al., 2017). While studies done in Puducherry (Selvaraj et al., 2014) & Turkey (Okyay & Erdoğan, 2017) found that antibiotics were most common drugs used for self-medication. Our study found that 32.72% of participants had experienced adverse effects after taking self-medication which was higher than the other studies done in Delhi (Kumar et al., 2015) (7.3%), the western part of India (Limaye et al., 2018) (4.7%), and Karnataka (V et al., 2017) (<5%) of participants had experien-

ced side effects of drugs due to self-treatment.

The major reasons for self-medication in the present study where illness was minor or not serious (57.8%), convenience (51.6%), Timesaving (51.6%), and cheap (42.2%). Similarly, other studies done in India reported the minor ailments, and saving time and money were the most common reasons for self-medication.(Kumar et al., 2015; S et al., 2014; V et al., 2017). Study done at Gondar town, northeast Ethiopia showed that the severity of illnesses (44.8%), emergency cases (35.3%), and reducing medical costs (17%) were the most common reasons for self-medication (Jember et al., 2019). The pharmacists/Chemists & previous prescriptions were found to be the main source of information for self-medicines in our study. Similar results were found in other studies (Kumar et al., 2015; S et al., 2014; Jember et al., 2019; Limaye et al., 2018).

This study was conducted only in an urban setting which did not show the practices of the rural area. Practices of traditional medications did not include in this study that which might underestimate our findings in the study area. The study might also be prone to recall bias as a result based on the participant's last 6 months' experiences.

Thus, it is concluded from this study that self-medication is found to be a common practice among 60% of the urban adult population. High prevalence was found among age groups between 30-60 years, male respondents, upper socio-economic class group, married, better service/job, and people with ≥10th standard education. Self-medication was a common practice for minor illnesses, convenience, and saved time-cost. Fever, cold/cough, and headache were the most common indication. Commonly used drugs are antipyretics & cold/cough remedies. The availability of drugs in the informal sector contributes to an increase in the practice of self-medication. This study showed easy availability of drugs from pharmacists & previous prescriptions are major sources for self-medication.

This study found higher adverse effects after self-medication. So, it recommends that a personal approach should be taken to prevent adverse effects caused by self-medication due to a lack of knowledge about using drugs, which includes awareness & education regarding self-medication. Improved knowledge & understanding about self-medication may result in rationale use & thus limit emerging microbial resistance issues & other adverse effects (Kumar et al., 2015; Limaye et al., 2018; V et al., 2017).

AUTHOR CONTRIBUTION

Yamini J. Gurjar as the main researcher, Nikita Savani, Trusha Kansagara, Meet Chauhan the counselors in the article writing.

FUNDING AND SPONSORSHIP

This study is self-funded.

CONFLICT OF INTEREST

There is no conflict of interest in this study.

ACKNOWLEDGMENT

Authors are grateful to all of the undergraduate students who had helped in data collection and all the participants of study.

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