Self-Medication Practices and Health Seeking Behaviour among Residents of Selected Villages in A Block of West Bengal: A Mixed-Methods Study

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Abstract:

Introduction: Self-medication can lead to problems such as adverse effects and antibiotic resistance. This study was conducted to estimate the proportion of self-medication practice, to elicit the reasons for practicing self-medication, to find the factors associated with self-medication practice and to assess the health seeking behaviour among a rural community of West Bengal. **Method:** A study with mixed-methods approach was conducted among 212 households from four selected villages in a block of West Bengal. Focussed Group Discussions were held with respondents who were practising self-medication. Data were analysed using SPSS 25.0 and Atlas ti 7.0. Multivariable logistic regression was performed to find the factors associated with self-medication practice. **Results:** The proportion of self-medication practice was found to be 41%. Allopathy was most commonly preferred system of Medicine (78.8%). Statistically significant factors associated with self-medication practice were education upto Middle school (aOR 3.59) and Secondary level (aOR 10.71), Class III socio-economic status (aOR 5.03) and presence of acute illness (aOR 28.92). **Conclusion:** Proportion of self-medication practice among rural population was high. This needs to be addressed and health education should be provided to them.

Keywords: Health Seeking Behaviour, Rural Population, Self-Medication, Village

Introduction:

Human beings have an inherent tendency to self-treat themselves at the first instance whenever they feel unwell. According to WHO, self-medication can be 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".[1] Due to lack of access to health care facilities many individuals opt to self-treat themselves at home using drugs which can be purchased in local shops without prescription.[2] The spectrum of self-medication involves acquiring medicines without a prescription, that is Over-The-Counter (OTC) drugs, resubmitting old prescriptions to purchase medicines, sharing medicines with relatives or friends or using leftover medicines stored at home.[3]

Health seeking behaviour is defined as "any action or inaction undertaken by individuals who perceive themselves to have a health problem or to be ill for the purpose of finding an appropriate remedy."[4] In addition to Allopathy, India boasts of

having six more recognized systems of Medicine namely Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy (AYUSH). The acceptance of a particular system of Medicine differs between urban and rural communities and depends upon their socio-cultural factors to large extent.In developing countries such as India, health problems are often treated through self-medication as lower cost method. Studies have reported prevalence of self-medication practice in India increasing from 31% in 1997 to 71% in 2011.[5]

The internet is the first physician now-a-days for patients seeking health advice.[6] In India, almost every pharmacy sells drugs without a prescription. Risks associated with self-medication include lack of clinical evaluation by a health care provider which could result in misdiagnosis and incorrect choice of drugs, delay in seeking appropriate treatments, use of excessive drugs or lower dosage, prolonged duration of use, adverse drug reactions and sometimes even masking of a severe disease.[7] Another serious concern with self-medication practice is the risk of developing antimicrobial resistance (AMR).[8] This is a major public health concern worldwide, especially in developing countries.[9]

According to a study published in The Lancet, about 39 million people in India fall into poverty every year as a result of OOP expenditure on health care.[10] In rural India, more than 80% of the hospital visits are made by people with majority travelling more than 100 kms just to receive basic health care services.[11]

Compared to studies on health seeking behaviour, there is a paucity of studies on self-medication practice especially among rural dwellers of West Bengal. Therefore, this study was conducted to estimate the proportion of self-medication practice, to elicit the reasons for practicing self-medication, to find the factors associated with self-medication practice and to assess the health seeking behaviour among a rural community of West Bengal.

Method:

A cross-sectional study was conducted using mixed-method approach in four selected villages of Budge Budge-II block, West Bengal from September 2020 to February 2021.

Study population:

The study population was the residents of the selected villages.

Quantitative: One individual from each household, preferably the head, was included.

Qualitative: Two Focused Group Discussions (FGDs) were held with individuals who reported practicing self-medication.

Individuals who did not give informed written consent to participate in the study were excluded.

Sample size and sampling technique:

Quantitative:

Taking proportion of self-medication practice p as 48.5% (0.485) from a study conducted at Anandnagar village in Singur block [5], q=1-p=0.515, Confidence Interval (C.I)=95% and absolute error L as 10%; sample size was calculated using Cochran's formula as follows:

$$N=(Z\alpha^2 pq)/(L)^2 = [(1.96)^2 x0.485x0.515]/(0.01)^2 = 96$$

After multiplying by design effect of 2 for multistage sampling and adding 10% as non-response, total sample size was calculated to be 212. These 212 households were selected by multistage random sampling. (Figure 1)

Qualitative: Two FGDs were conducted with six participants in each selected by purposive sampling.

Study tools:

Quantitative: The study tool was a pre-designed, pre-tested structured schedule. The schedule was pre-tested among 20 randomly selected households for its validity and reliability. The residents who were selected for pre-testing were not included in the final study population.

Table 1: Distribution of the study population according to the group of self-medicated drugs used (n=87)*

Group	Drug	n (%)
NSAIDs	Paracetamol/ Ibuprofen/ Aceclofenac	44(20.7)
Anti-histaminics/ Anti-allergics Decongestant	Cetirizine, Levocetirizine, Montelukast, Chlorpheniramine, Phenylephrine	24(11.3)
Antacids, H_2 blockers and Proton Pump Inhibitors (PPIs)	Pantoprazole, Ranitidine, Antacid gel (Digene)	21(9.9)
Laxatives	Ispaghula (Isabgol)	12(5.6)
Cough syrup	Cough syrup	11(5.2)
Antibiotics/Anti-protozoals	Azithromycin, Ofloxacin, Norfloxacin Metronidazole	6(2.8)

*Includes Multiple response

Qualitative: FGDs were conducted with help of guide which was validated by public health experts.

Study technique:

Quantitative: For data collection door-to-door visit of the selected households was done. At first, the head of the family was approached. If unavailable, then any other adult member giving consent was interviewed. If a resident of any household did not give consent, then the next selected household was approached. If any household was found locked on two consecutive days, then next household was approached. Data collection was done using face-to-face interview method and all the responses were recorded in the schedule.

Qualitative: Two FGDs were conducted in the Rural Health and Training Centre. Each FGD lasted for about 20 minutes.

Study variables:

Quantitative:

Dependent variables: Self-medication practice and Health seeking behaviour

Independent variables: Socio-demographic and background characteristics, Co-morbidities or chronic illnesses (if any), Acute illness or any other health conditions in last 3 months (if any), Factors related to self-medication practice

Qualitative: Four domains on self-medication were focused- awareness, pattern, reasons and perception

Operational definitions:

Self-medication: Practice of taking any form of medication for any type of illness without a doctor's prescription within last 3 months.

Health seeking behaviour: Refers to type of health care service and facility preferred by an individual to maintain, attain or regain good health and to prevent development of illness in future.

Data analysis:

Quantitative: All of the 212 households were included in analysis. Data was analyzed using SPSS version 25.0. Descriptive statistics were used to summarize the data. Bivariate analysis was performed to ascertain relationship between presence of self-medication practice and the socio-demographic characteristics. All independent variables having p-value<0.20 were considered biologically plausible to be included in the Multivariable binary logistic regression model. Data was checked for multicollinearity (VIF<10) and variables with p-value<0.05 were considered statistically significant.

Qualitative: Qualitative data was analyzed with help of Atlas ti 7.1 software in the form of themes, codes and verbatim.

Table 2:Multivariable binary logistic regression predicting Self-medication practice (n=212)

Socio-demographic characteristics		Practice Self-medication (n=85)				
		β	S.E	AOR	95%C.I	p-value
Age group (in years)	18-30	-0.608	0.975	0.544	(0.081-3.680)	0.533
	31-45	-0.959	0.801	0.383	(0.080-1.842)	0.231
	46-60	0.336	0.735	1.399	(0.331-5.914)	0.648
	>60	-	-	1	-	-
Gender	Male	-0.568	1.292	0.566	(0.045-7.121)	0.660
	Female	-	-	1	-	-
Education	Non formal education	1.095	0.808	2.989	(0.614-14.553)	0.175
	Primary	1.280	0.728	3.597	(0.863-14.998)	0.079
	Middle	2.371	0.656	10.707	(2.960-38.727)	p<0.001
	Secondary	2.624	0.760	13.791	(3.109-61.166)	0.001
	Higher Secondary	-0.594	1.534	0.552	(0.027-11.162)	0.699
	Graduate	2.179	1.300	8.836	(0.692-112.870)	0.094
	Post Graduate	21.975	40192.97	-	-	1
	Illiterate	-	-	1	-	-
Occupation	Service	0.650	1.680	1.915	(0.071-51.559)	0.699
	Business	1.309	1.439	3.703	(0.221-62.096)	0.363
	Skilled job	0.524	1.463	1.689	(0.096-29.685)	0.720
	Unskilled job	2.028	1.348	7.602	(0.541-106.729)	0.132
	Retired	0.803	2.135	2.231	(0.034-146.478)	0.707
	Unemployed	21.508	17651.853	-	-	-
	Homemaker	-	-	1	-	-
Type of family	Joint	0.575	0.461	1.777	(0.720-4.385)	0.212
	Nuclear	-	-	-	-	-
Marital status	Widowed	0.214	0.886	1.239	(0.218-7.038)	0.809
	Unmarried	0.755	1.848	2.217	(0.057-79.56)	0.683
	Married	-	-	1	-	-
Socio-economic Class*	Class II	0.280	1.158	1.323	(0.137-12.798)	0.809
	Class III	1.615	0.642	5.029	(1.429-17.695)	0.012
	Class IV	0.914	0.544	2.493	(0.858-7.246)	0.093
	Class V	-	-	1	-	-
Acute illness in last 3months	Yes	3.365	0.537	28.924	(10.104-82.797)	p<0.001
	No	-	-	1	-	-
Constant		-4.835	1.016	0.089	-	-

*Modified BG Prasad scale 2021 with CPI-1097[34]

Table 3: Thematic analysis from FGD-1 and FGD-2 (n=12)

Themes	Codes	Verbatims
A. Awareness	1. What is self-medication	"...taking medicines on our own for common health problems without going to doctor."
	2. Instructions on medicine	"Before using we see the expiry date." "...don't read directions or instructions at the back of the medicine"
	3. Dosage	"...as these medicines are repeated, we know the dose and how to take"
	4. Side effects	"...headache, nausea, reeling of head" "...stop when any side effects occur."
B. Pattern	1. Name of medicine	"Paracetamol, Medicine for gas (acidity), cetirizine, cough syrup, vitamin tablet."
	2. Source	"...we keep common medicines at home." "Take the old prescription to the shop."
	3. Illness	"...for common problems like fever, headache, acidity, loose motion, cold and cough"
	4. Duration	"...stop when symptoms disappear" "Complete the full course as per old prescription"
C. Reasons	1. Mild illness	"...no need of going to doctor for mild illness." "Medicines for mild illnesses are there at home."
	2. Health facility	"There is a long queue at rural hospital." "...no one to take me there" "Hospital is far from my house."
	3. Self-decision	"I know the medicine name so I take it by myself."
	4. Daily wage loss	"Going to the hospital means loss of one day's work for me."
	5. Government medicine does not work	"The medicines from Government supply don't work."
	6. Emergency	"In emergency it is not possible to go the doctor, so we take medicine by our own."
D. Perception	1. Good practice	"It is good only to take medicine if we know about it. In today's time one should know about common medicines."
	2. Bad practice	"Its is not good to take medicines without consulting doctor."

Ethical Consideration:

Institutional Ethics Committee permission was obtained prior to start of the study (Institute name/IEC/2020/665 dated 06.02.2021). Informed written consent was obtained from each participant and all ethical principles were strictly adhered to throughout the course of the study.

Results:

About 35.8% of the study population belonged to 46-60 years age group. Proportion of males and females were nearly equal. Nearly 3/4th of the study population were Hindus (73.6%), about 78.8% belonged to General category as far as caste was considered and 84.9% were married. More than onethird of the study population (35.4%) was illiterate. Regarding occupation, about 46.7% were

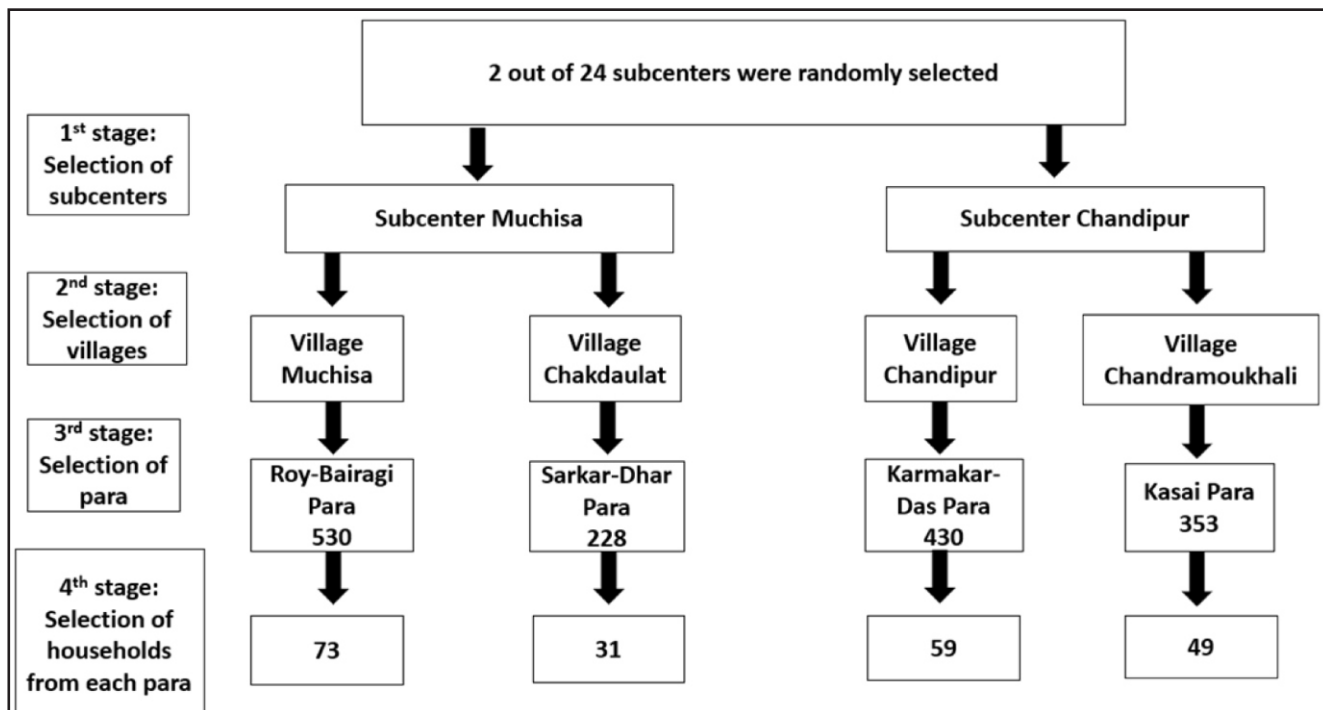**Figure 1: Process of sampling technique (n=212)**

Figure 2 A : Health seeking behaviour in Government Health Facilities (n=212)
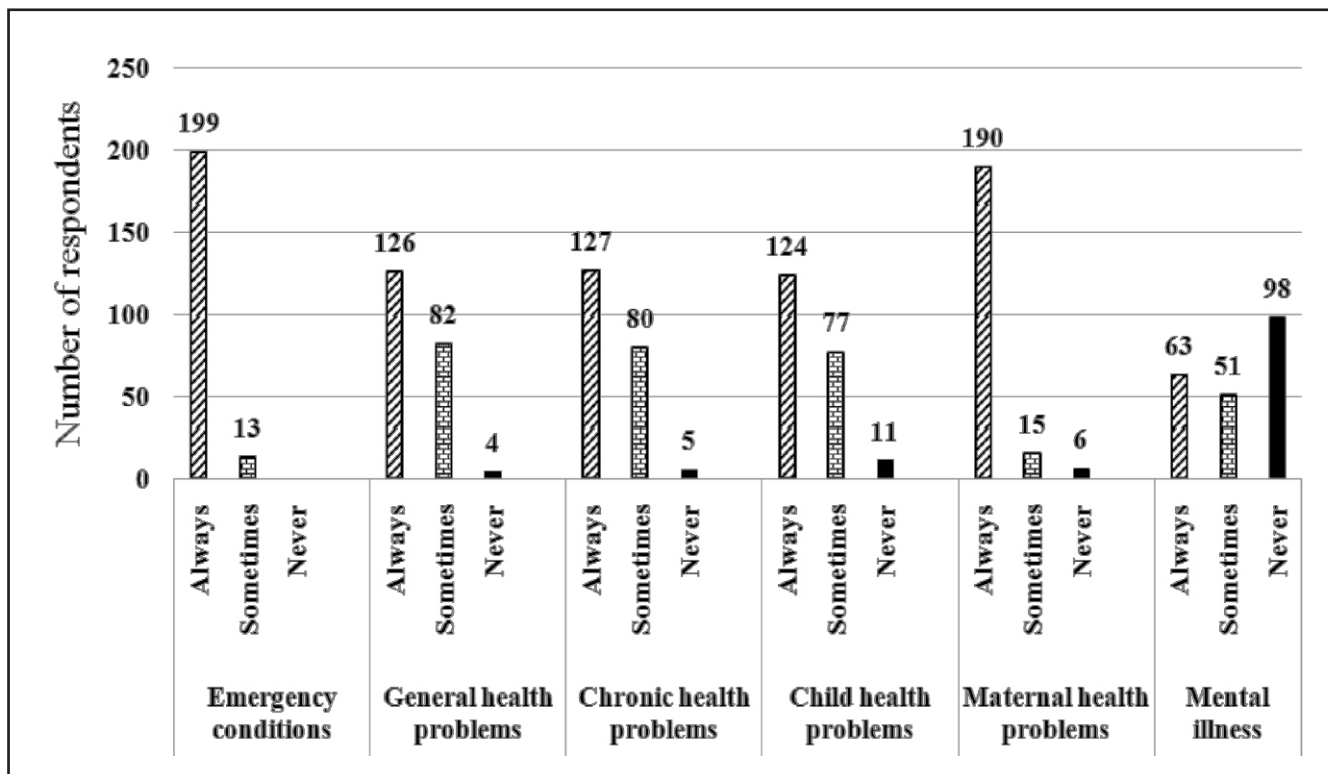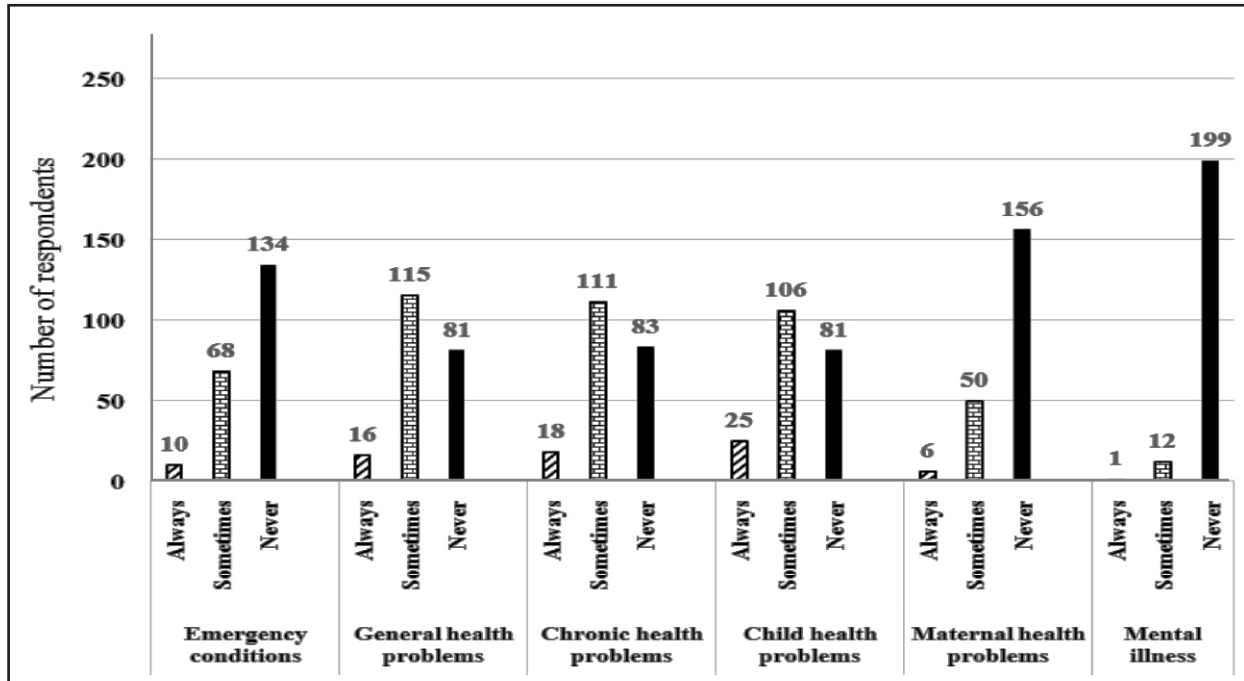
Figure 2 B : Health seeking behaviour in Private health facilities

homemakers and 21.2% did unskilled work. About 56.1% of the study population belonged to joint families. A little over two-fifth belonged to lower class (Class V) as per Modified BG Prasad Scale 2021 (42.5%) with a median Per capital monthly income of Rs 1316.[12] As far as addiction is concerned, about 43.4% had atleast one addiction most commonly being smoking.

More than half of the study population had atleast one co-morbidity (54.2%). Hypertension was the most common co-morbidity followed by Type 2 Diabetes Mellitus, Coronary Heart Disease and Prolapsed Intervertebral Disc (PIVD). About 52.9% individuals reported experiencing an episode of acute illness in the last three months. Rhinitis, fever, cough, knee/joint pain and fungal infection/scabies were commonly reported. COVID-19 infection was reported from 12 study subjects.

The prevalence of self-medication practice found in 87 households (41%). Most common source for procuring self-medication was nearby pharmacy shop (73.6%) followed by medicines stored at home (24.1%). Concerning frequency, about 34.4% practised self-medication sometimes. Most common group of drugs that were consumed were NSAIDS such as Paracetamol, Ibuprofen and Aceclofenac followed by anti-histaminics like Cetirizine. About 7% respondents admitted taking medicines without having any condition. Most commonly used were Multivitamins and B-complex capsules to prevent COVID-19 infection and stay healthy.(Table 1)

Table 2 showed Multivariable binary logistic regression determining predictors of self-medication practice. Predictors of self-medication practice were education upto Middle school (AOR 10.70, p<0.001) and Secondary level (AOR 13.79, p<0.001), Middle socio-economic status (AOR 5.02, p=0.012) and presence of acute illness within last three months (AOR 28.92, p<0.001).

Thematic analysis from the FGDs have been presented in table 3.The different themes (codes) that emerged were awareness (what is self-medication, instructions on medicine, dosage, side effects), pattern (name of medicine, source, illness, duration), reasons (mild illness, health facility, self-decision, daily wage loss, government medicine does not work, emergency) and perception (good practice, bad practice).

Regarding health seeking behaviour, more than 3/4th of the study population preferred Allopathy

(78.8%) followed by medicines prescribed by Rural Medical Practitioners(12.3%) and Homeopathy (9.0%). When asked about the type of health care facility preferred, about 59.9% preferred Government, 18.9% preferred private health care facilities, 9% preferred Homeopathy clinics and rest (12.3%) preferred Rural Medical practitioners. Among those who preferred Government health care facilities, 86.6% preferred the nearby rural hospital while 3.9% preferred tertiary care hospital. (Figure2A & B)

Discussion:

Self-medication Practice

The proportion of self-medication practice in this study was found to be 41%. This is less than the finding from study conducted by Taklidar et al. in South Bengal (48.5%)[5] by Ahmad et al. in Sahaswan town of North India (50%),[13] study conducted by Kumar et al in the rural area of Chittoor District, Andhra Pradesh (51.75%),[14] by Anandurai et al in Nelikuppam village in Kancheepuram district of Tamil Nadu(53.4%),[15] 55% in rural area of Meghalaya by Marak et al.,[16] 58.4% in another study in rural Tamil Nadu by Gayatri et al.,[17] in rural areas of Pune, Maharashtra by Kech et al. (64.3%),[18] study by Rangari et al. a rural area of Andhra Pradesh (68.1%),[19] by Balamurugan in Pondicherry (71%),[11] inUttar Pradesh by Jain et al. (72%)[20] and by Reddy et al.among village population of Kadapa town, Andhra Pradesh (74%).[21]

In the present study, self-medication was most commonly used for common cold and cough which corroborated with the findings of studies by Nidagundi et al. conducted in rural area of Karnataka[22] and Balamurugan and Ganesh in Puducherry,[11] West Bengal study[5] and North East study.[16] Fever was the most common condition for practising self-medication in rural Maharashtra (39.4%),[23] Kanchipuram town (39.8%)[17] Nellikuppam village (55.8%) of Tamil Nadu,[15] while headache was reported as most common in Uttar Pradesh,[13] Vishakhapatnam[19] and Bangalore.[22]

The most common self-medicating drugs were NSAIDS such as Paracetamol, Aceclofenac and Ibuprofen for problems like fever, headache and knee joint pain. This corroborated with the findings of most other studies which also reported rampant use of analgesics and antipyretics. However, it was in contrast to the findings by Limaye et al. in Tala areas of rural Maharashtra where most common group of self-medicated drugs were antacids and antibiotics.[23]

Our study reported a higher prevalence of self-medication practice among males than females (60.9%%) which was in line with most other studies but was in contrast with the findings from Hooghly study (57.5%),[5] Chittoor study[14] and Maharashtra study[23] where females practised self-medication more. This may be due to the fact that most of the females in our study were homemakers and lacked access to over-the-counter drugs due to reasons such as social beliefs, customs, lack of autonomy and economic independence.

Self-medication was commonly used in the age group of 15-45 years. Amareswara et al. also reported similar findings in a study conducted in rural Andhra Pradesh.[24] Commonest source of procuring self-medication was nearby medicine shop (73.6%). This was higher than the findings in the West Bengal study (59.3%)[5] and Puducherry study (57.3%)[11]

Common reasons reported for practising self-medication were easy availability of medicines at nearby shop without prescription and perception that the illness is mild and there is no need of consulting a doctor. Similar findings were observed in the study conducted in Kancheepuram district[15] and rural Karnataka[22] which reported mild illness as the most common reason for self-medication practice. In addition, at Kancheepuram district, unavailability of doctors at the nearest health care facility was another leading cause for opting self-medication.[15]

Health Seeking Behaviour

Present study showed that Allopathy was the most preferred system of Medicine (78.8%) which was similar to findings by Kumar et al. in Varanasi (77.9%)[25] whereas in a study in rural Karnataka, a little over half of the study population preferred Allopathy (55.54%) followed by Ayurveda (33.4%).[26] Sharma et al who conducted a study in Shimla reported that 81.4% of the respondents preferred Allopathy while 11.3% preferred the Ayurveda system.[27]

This study reveals preference for government health care facilities (59.9%) over private health care facilities (18.9%). In rural Karnataka too, 48.15% of the study population preferred public health sector over private (31.29%).[26] In Varanasi study, 74% of the respondents sought treatment from government hospitals followed by pharmacy (20.9%) and private practitioners (17.4%).[25] Further, a study in a slum in Mumbai by Patil et al. showed 85.5% of the study population preferred government hospitals, while only 14% preferred private hospitals.[28] High preference of government health care services has also been reported by Sachdev et al. in their study in Rajasthan and Aggarwal et al. in Dehradun district.[29,30]

Present study showed that more than half (52.3%) of the study population were aware of various health insurance schemes. However, only 4.7% of the respondents had insurance coverage, out of which most (90%) had subscribed to government health insurance schemes. Netra et al. in their study at Davangere (Karnataka), reported higher (65.7%) level of awareness among the respondents, while 45.5% of them had insurance coverage, 90.5% of them being under government schemes.[31] Further, Indumathi et al. in rural population of Bangalore district also brought out a high level (75.7%) of awareness on health insurance schemes, while 66.9% of them were existing subscribers.[32] In another study by Bansal et al., in Fatehgarh, Uttar Pradesh among rural population, low levels (43.4%) of awareness were reported.[33]

Strengths:

This was a rural community-based study with robust study design including mixed-methods approach.

Limitations:

There could have been a possibility of social desirability bias as some respondents might have given socially favourable responses. More numbers of FGD could have been given better understanding of reason behind self-medication. Also, an awareness intervention could have been better.

Conclusion:

There was a high proportion of self-medication practice among rural community dwellers and Allopathy was most commonly preferred system of Medicine. Factors associated with self-medication practice were education upto middle school and secondary level, middle socio-economic status and presence illness in last 3 months. Health education should be provided to them regarding the hazards of practising self-medication, irrational and inappropriate use of medicines and drug resistance. Public awareness along with enforcing and implementing laws about prescribed medications can reduce the rate of self-medication practice.

Declaration:

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Conflict of Interest: Nil

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