

## ORIGINAL ARTICLE

**Self-medication and its associated factors in Amdanga block of West Bengal**Suchetana Bhattacharyya<sup>1</sup>, Sayeli Mitra<sup>2</sup>, Swagatendra Narayan Basu<sup>3</sup>, Inba Raja Alagesan<sup>3</sup>, Rivu Basu<sup>5</sup>

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**Abstract**

**Background:** The WHO defines the use of medications without prior medical consultation regarding indication, dosage and duration of treatment as self-medication. The practice is a global problem. **Aims and Objectives:** The study was conducted to describe the care seeking behavior of rural self-medicators living in Amdanga Block of West Bengal and to assess the belief in medicines by the self-medicators. **Material & Methods:** A descriptive cross-sectional study was conducted by interviewing with a pretested semi-structured questionnaire on 665 self-medicators out of 1740 adults who were interviewed in 80 villages of Amdanga Block, West Bengal. A three-stage sampling method was used to reach the study population. A three month recall on self-medication practice was considered operationalizing the “pull” and “push” factors of self-medicators using a Pshycho-social framework. The variables were Socio-demographic factors, Care Seeking Behaviors, Health System related factors, Belief in Medicines according to the framework. **Results:** The prevalence of self-medication was found to be 38.2%. 63% of the study subjects were female and 56.3% had a literacy status of middle school and above. 54.4% relied on their old prescription for self-medication. 68.7% had an initial choice to consult a doctor but later self-medicated of whom 53.2% changed their choice due to monetary and transport issues while 38.5% thought of self-medication considering their disease was mild in nature. **Conclusion:** Awareness and health education can link rural subjects with primary care facility and right decisions on care can be provided.

**Keywords**

Self-Medication; Side effects; Rural; West Bengal

**Introduction**

The World Health Organization (1) has defined self-medication “the use of medications without prior medical consultation regarding indication, dosage, and duration of treatment is referred to as self-medication”(2).

Studies conducted in India (3-5) have noted the prevalence of self-medication to be ranging from 29.1% to 55% depending on the study design and area where the study was conducted. It was noted in prior studies (7-11) from this country and abroad that a myriad of factors starting from geographic isolation (3) to

sociodemographic factors are associated as likely determinants (4-11) of the prevalent social occurrence of self-medication. However past studies in this country have not delved into self-medication in the perspective of a socio-psychological framework that may exist encompassing the social belief about medication with respect to available health services and consequent care seeking behaviour of the individuals who practice self-medication. Thus, in this study Force Field Analysis (12) was used to identify the pushing and pulling forces or factors that might have led to self-medication by the subjects.

## Aims & Objectives

1. To determine the proportion of the rural population who are using self-medication
2. To find out the characteristics of the self-medicators.

## Material & Methods

A cross sectional study was done with a descriptive design for 6 months.

The study population consists of all the adult people residing in Amdanga Block of North 24 Parganas, West Bengal. This block is chosen to get maximum convenience for collecting data, as it is the field practice area of R G Kar Medical College, Department of Community Medicine.

All adult persons who have self-medicated within the past three months of enquiry were the study subjects. Limiting the recall period to only the past 3 months keeps the risk of recall bias to an acceptable minimum, as has been learnt through previous studies in this area. (13)

To calculate the sample size, the prevalence was taken to be 50% as per prior study in North India (5). Thus, the required sample size that is calculated was 1700 considering 97% confidence interval and design effect to be 1.3. Rounding off for whole numbers in case of persons to be selected from each village increased the sample size to 1740. According to All adult (18 years and above) were included in the study. Those who were not willing to give consent or are seriously ill is excluded from the study.

A three stage sampling was done. (Figure 1)

Upon reaching the desired sample size of study subjects the sampling from that village ceased and the next village was sampled. This denominator used for the first objective, was adult populations of Amdanga Block, and for the next one, all the self-medicators were taken into the study.

The Force field analysis (12) framework was used to brainstorm variables of the study. Extensive literature search was also done to identify the variables related to self-medication. The variables are Social and economic factors, Care Seeking Behaviors (Culture and lay beliefs about illness and treatment, Knowledge about health services, Knowledge about medicines), Health System related factors (Long distance from treatment center, high cost of medication, Choice of Health systems, accessibility to health services, presence of Health Insurance), Belief in Medicines (General concern about Medication, Specific concerns about medication usage, belief of medicinal actions, concerns of medicinal side effects). For each of these domains, there were some "pull" and some "push" factors that were available.

The study tool comprised of a predesigned, pretested semi structured schedule. The schedule had 4 sections, Sociodemographic Profile, Self-Medication behavior, Care seeking behavior and Belief in Medication. A Predesigned checklist in form of a flash card was shown to the study subjects by the researchers to facilitate the recall of illness for which the self-medication was taken. A visual analogue

scale was included in the flashcard to estimate the degree of difficulty felt due to the illness for which medication was consumed by the study subjects.

The tool items were identified with the help of a multi-disciplinary group of experts using a modified Delphi technique. The group constituted of 2 experts from psychology department, 2 experts from medicine and 2 experts from public health specialist. Pretesting was done on a subset of population (30) of the same area, and the schedule was checked for any comprehensibility issues. Vallarend and Haccoun methodologies (13) were used for development. Following the Vallarend methodology the preliminary version of the original instruments was prepared in a regional language by four translators (Bengali). To establish preliminary version of the instrument back translation was done involving four persons, not involved in this study procedure. The back translated English version was compared with the original version. Cronbach's alpha coefficient was tested for consistency and was found to be 0.81. The total population was evaluated to find out the proportion of self-medicator. The study subjects of self-medicators were then interviewed with the schedule for their responses on the questions in the schedule.

Data was entered in Epi Data form. Researchers entered data and a second person validated the entry by random checking. Appropriate descriptive statistical analysis were done to describe the data.

## Results

Total adults(sample) who were interviewed by asking if they have self medicated in last three months were 1740, and among them 665 participants were found to be self-medicator. Thus, the prevalence of self-medicator in the current study is 38.2%. in the Table 1 it is seen that, 184 (27.7%) people among total self-medicators are in the age group 45-54 years. Lowest prevalence of self-medication was found in age group more than 65 years (5.9%). Among the total self-medicators, majority i.e. 419 (63%) are females. Three thirty-one (51%) self-medicators live in joint family.

It was also found that 374(56.3%) who have middle school education and above are self-medicators followed by 213 (32%) who are illiterate or had no formal or primary level education. And only 11.7% self-medication were illiterate. It was found that almost half i.e., 334 (50.2%) self-medication took the decision of self-medication by seeing the price of drug and 215 (32%) self-medicator by seeing name/brand of drug.

Maximum (96.2%) drug used for self-medication was allopathy drug. Almost 599 (90.1%) self-medicators procured drug from medicine shop and 139 (20.9%) procured from family members. On asking how they decided on the dosage of drug, 368 (55.3%) self-medicators referred old prescriptions to know the name and dosage of drug followed by compounder (47.4%) and

family member (15.6%). And only 8.7% from health care worker.

Further, as seen in table 1, it was also noted that 57 (8.6%) people among the total self-medicators have experienced side effect related to drug they took. The most experienced side effect is acidity which is experienced by 18(2.7%) people, followed by abdominal pain and rash and drowsiness. In the current study, as seen in [Table 2](#), it was found that the first preferred place of treatment is nearby government health facilities (mainly PHCs and BPHCs) i.e. 57.6% followed by pharmacy and private hospital. But their decision deviated, and they opted for self-medication because 179 (26.9%) thought their symptoms are not so serious. Also 80 (12%) think that going to hospital and getting treated is time consuming. Also 49 (7.4%) complained the health service center is quiet far from their residence. In this study ([Table 3](#)), it was found that 181 (27%) self-medicators do not usually go to local doctors because they don't trust the doctors, followed by long queue in hospitals (10.5%). Among the self-medicator, 571 (85.9%) has procured their medicine from pharmacy in these 3 months recall time and 70 (10.5) self-medicator had the medicine at their home. 9 (1.4%) bought from homeopathy dispensaries. It was found that 478 (71.8%) of self-medicators didn't have any insurance card and only 187 (28.2%).

In [Table 4](#) it is seen, on asking about the necessity of medicines for which they choose to self medicate, 396 participants (59.4%) feel that their medicine protects them from getting sick and 337 (50.7%) feel their health in future too will depend on medication. On asking about whether they are worried about side effects of medicines, 477 (71.1%) are worried about taking medicines and 420 (63.2%) are worried about long term side effects on their health. Again, when asked if they believe on the prescribed medicines advised by the qualified doctors, more than 70% self medicators said doctors advices and trusts too many medicines and doctors should give more time to patients. On asking about the harmful effects of medicine, almost 83% feels that too much medicine are poisonous and 67.5% feel that medicine do more harm than good.

## Discussion

In the current study, the prevalence of self-medication in the rural area of Andhra Pradesh was found to be 38.2%. Similar prevalence is found in the study of rural areas of Hyderabad (30.5%) (13). But somewhat higher prevalence of self-medication in the rural area of Andhra Pradesh was found i.e., 68.1%. (14). The present study shows more prevalence of self-medication in females (63%) than males (37%). This finding is in consistent with the finding of study by Nair S. et.al. (15) and Limaye D et al (14). Reason for this finding in the current study may be that females don't get so much time to go to doctors, as they have work at home and take care of their babies.so they either procure

from pharmacy or from other family members as stated by the female participants. Another reason can be at that time of the day females were mostly available in their houses.

In this study, the main source of self-medication from where the drug was procured was directly from the pharmacy i.e. Pharmacists (90.1%). Similar findings were reported in the study by Annudurai K et al, in rural population of Tamil Nadu (6). The reason as per the study is feasibility and availability to pharmacy near to their houses.

In the present study, majority of self-medicator is in age group of 45-54 years followed by 35-44 years. This finding is in contrast with the study by Subhashini et. al in Madurai (5). But lower prevalence of self-medication among the age group >65 years was found in this study which is also in consistent with a study conducted by Garla BK et al. (17). The reason of this finding in this study may be as a person age, he acquires many chronic diseases, so routine visit to a doctor is necessary for them as stated by the elderly participants.

The present showed that more than half i.e. 56.3% of the self-medicators have received middle school education and above. This finding is not In line with the study by Kazaura MR (18) on adults in rural area of Tanzania. In the study they found maximum self-medicators have received no formal or no education. Reason may be knowledge of name of some medicines.

In the present study, the majority of the participants responded that doctors' advice not needed for common illness/minor illness as the main reason for self-medication. This finding is consistent with the finding of the study by Rangari GM et al (15). But in contrast with study of Gayathri et al. (8), the main reason they said for self-medication was the poor quality of care and long queues in Government hospitals, which is second most important reason for self-medication in the current study.

In the current study, 8.7% self medicators experienced side effects. This finding is in line with the study done by Shamsudeen SM et al (19).

## Conclusion

The present study, reveled quiet 665 (38.2%) participants were found to be self-medicating. It is seen across all the sociodemographic characters. Females and younger age group were found to have higher prevalence of self medication. And some of them have experienced side effects. Majority of them procured medicines either from pharmacy or friends/families. And maximum never go through the leaflet. As per the study, The factors leading to self-medication are treatment of minor illness, residence far from healthcare sector, queues inside hospital, no trust on doctors etc. Self-medication without knowledge of drugs and its side effects may lead to life threatening condition of the patients.

## Recommendation

Self medication as we know that is very much prevalent in the rural area, which may sometimes be very dangerous for public health. Self medicators most of the times do not follow the proper duration or dosage of medication, particularly antibiotics, which may lead to antibiotic resistance among common people. Also, many people don't understand the consequences of side effects of the medication.

It may be necessary that proper information and awareness regarding self-medication and its side effects in the community through television, net, newspaper should be given to common people and strictness regarding pharmaceutical advertisements should be maintained. Proper patient centric health system management initiatives should be taken for addressing accessibility and affordability issues.

Studies on pediatric population is also of utmost important both in rural and urban area.

## Limitation of the study

The participants were asked if they self-medicated in last three months or not. This may not show the actual picture of practice of self-medication in that area. Although shorter recall periods are good to avoid recall bias but longer recall period give more data regarding self-medication, side effects etc. The study was done in one rural area of West Bengal so the findings may differ in another area or in an urban setting. Another limitation is in this that we do not have a breakup for the drug type used by self-medicators. If there was use of antimicrobial drugs in huge proportion, this could give an idea on antimicrobial misuse and hence, concern for programs on antimicrobial surveillance and stewardship.

## Relevance of the study

Self-medication among people is very common occurrence in this country. In the study force field analysis has been used to understand the factors/ forces which are playing against and for the self-medication practice. The study shows various factors like distance of health care facility from home and cost of travelling, crowd inside the hospitals, behavior of the staffs as pulling force for self-medication.

## Authors Contribution

SB: concept, design, literature studies, data acquisition, data analysis, statistical analysis, manuscript preparation, editing and review. SM: concept, design, literature studies, data acquisition, data analysis, statistical analysis, manuscript preparation, editing and review. IRA: concept, design, literature studies, data acquisition, data analysis, statistical analysis, manuscript preparation, editing and review. SNB: concept, design, literature studies, data acquisition, data analysis, statistical analysis, manuscript preparation, editing and review. RB: concept, design, literature studies, data acquisition, data analysis,

statistical analysis, manuscript preparation, editing and review. The manuscript has been read and approved by all the authors, that the requirements for the authorship as stated earlier in this document have been met, and that each author believes that the manuscript represents honest work.

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**Tables**

**TABLE 1 DISTRIBUTION OF SELF-MEDICATOR ACCORDING TO THEIR SOCIODEMOGRAPHIC CHARACTERISTICS AND USAGE OF MEDICINES. (N=665)**

Sociodemographic characteristics	Frequency	Percentages (%)	Confidence interval (95%)
Age	18 –24	58	6.69-11.13
	25 - 34	143	18.44-24.82
	35 - 44	146	18.86- 25.30
	45 - 54	184	24.30-31.24
	55 - 64	95	11.71-17.18
	>65	39	4.20- 7.93
sex	Male	246	33.31-40.79
	female	419	59.21-66.69
education	illiterate	78	9.38-14.42
	Literate nonformal and primary education	213	28.50-35.73
	Middle education and above	374	52.37-60.05
Type of Family	Nuclear	326	45.16-52.89
	Joint	339	47.11-54.84
Number of family members	Alone	5	0.24-1.75
	2 members	33	3.44-6.90
	>2 members	627	92.24-95.92
Incope/capita (B.G.Prasad scale 2019)	<1050	68	8.03-12.78
	1051-2101	240	32.43-39.87
	2102-3503	268	36.55-44.14
	3504-7007	78	9.38-14.42
	>7008	11	0.83-2.94
occupation	Unemployed	446	63.3-70.2
	Unskilled	130	16.60-22.7
	Clerical/shop owner	51	5.76-9.96
	Skilled owner	22	2.9-4.97
	Semi professional	16	1.38-3.88
Factors influencing decision of self-medication	Price of drug	334	46.36-54.09
	Name of drug	215	28.79-36.03
	Type of treatment	116	14.63-20.55
Type of drug used for self-medication	Allopathy	640	94.50-97.55
	Ayush	25	2.45-5.50
Expenditure(in Rupees) during last purchase/procurement of medicine	≤80	360	50.26-57.97
	>80	305	42.03-49.74
Medicines procured from	Medicine shop	599	87.55-92.24
	Government centres	52	5.89-10.13
	Family members	139	17.87-24.19
	Mobile/internet	1	0.00-0.83
	Medical representatives	17	1.50-4.06
	Quack	15	1.27-3.69
Read medical insert	Yes	56	6.42-1.080
Advice for the particular medicine in last self-medication given by-	Doctor over phone	2	0.04-1.08
	Health worker advice	58	6.69-11.3
	Compounder	315	43.52- 51.24
	Family member	104	12.96-18.63
	Reading medical insert	2	0.04-1.08
	Advertisements/internet	0	0
	Unqualified local practioners	21	1.96-4.79
Changed dosage of medication before the recommended dosage	yes	143	18.44-24.82
Stopped medication before recommended time period	yes	575	83.63-88.97
Side effects to medicine	Yes	57	6.56-10.96
	Abdominal pain	16	1.38-3.88
	Gas and acidity	18	1.61-4.24
	Drowsiness	9	0.62-2.55
	Rash and allergy	14	1.16-3.51

**TABLE 2: DISTRIBUTION OF STUDY SUBJECTS ACCORDING TO THEIR PREFERENCE OF PLACE OF TREATMENT.**

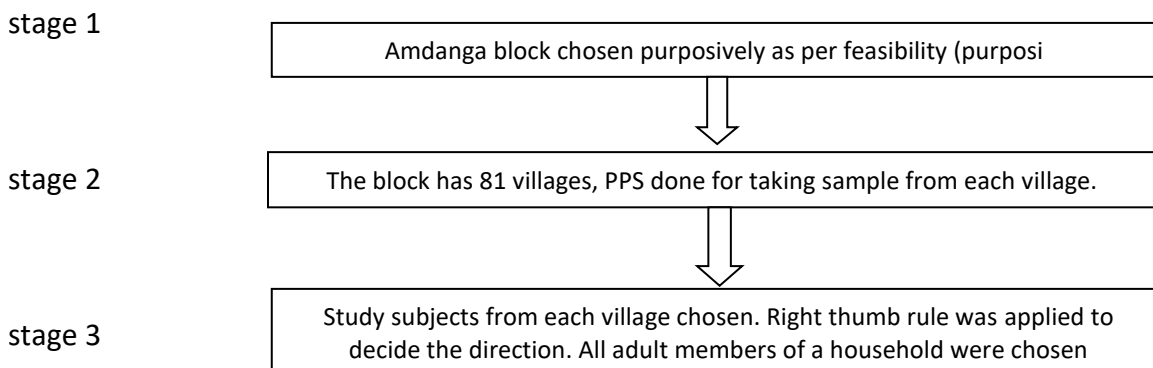
Preferred place of treatment in general	1 <sup>st</sup> preferred choice N=665	2 <sup>nd</sup> preferred choice N=65	3 <sup>rd</sup> preferred choice N=23
Primary health care	77(11.6)	1(.2)	-
Secondary health care centre	306(46)	49(7.2)	2(.3)
Tertiary health care	34(5.1)	8(1.2)	17(2.6)
Pharmacy	208(31.3)	4(.6)	1(.2)
Private hospital	40(6.0)	3(.5)	1(.2)
Ayush	-	-	2(.3)
Reason for changing choice	1 <sup>st</sup> preferred choice [N=476]	2 <sup>nd</sup> preferred choice N=65	3 <sup>rd</sup> preferred choice N=23
Too much far from house	49(7.4)	31(4.7)	7(1.1)
Time consuming while travelling	80(12.0)	-	-
Monetary loss due to travelling or purchasing medicine	28(4.2)	4(.6)	1(.2)
Disease not serious	179(26.9)	7(1.1)	1(.2)
Queue inside the hospital	5(.8)	1(.2)	10(1.5)
Doctor of choice not available	14(2.1)	3(.5)	2(.3)
Any usage disruption	44(6.6)	-	-
No one to accompany to the health facility	45(6.8)	4(.6)	-
Behavior at govt hospital by hospital staffs	16(2.4)	-	-
others	16(2.4)	6(.9)	1(.2)
No referrals	-	9(1.4)	1(.2)

**TABLE 3 DISTRIBUTION OF STUDY SUBJECTS ACCORDING TO FACTORS INFLUENCING HEALTH SEEKING BEHAVIOR. (MULTIPLE RESPONSE) [N=665]**

Factors influencing the health seeking behavior of self medicators	
Home far from choice of care	244(36.7)
Convenient to reach caregiver	421(63.3)
Attends local doctor	391(58.8)
Knowledge about local health worker services (like availability of medicines)	461(69.3)
Anyone accompany during treatment	490(73.7)
Initial preferred place of procuring medicines	
pharmacy	571(85.9)
Homeopathy dispenseries	9(1.4)
Village health practioners	15 (2.3)
Medicines already at home	70 (10.5)
Services considered while choosing health care facility	
Convenience to procure medicine	518 (79.1)
Cheap / free medicine	2(0.3)

**Figures**

**FIGURE 1 FLOW CHART SHOWING THE 3-STAGE SAMPLING FOR CHOOSING THE STUDY SUBJECT**



Available at night time	1 (0.2)
Belief in treatment	5(0.8%)
Nearby their home	71(10.7)
Good treatment and behaviour of health staff	60(9)
Reasons for attending the local doctors	
Travel expenses	46(6.9)
Long queues inside the hospital	70(10.5)
Do not trust the doctors in the hospital	181(27.2)
Not getting time to visit doctors in government hospital due to personal work.	8(1.2)

**TABLE 4 KNOWLEDGE ABOUT HEALTH, MEDICINE AND SIDE EFFECTS RELATED TO MEDICINES**

Why do you feel that medicines are necessary?	Disagree n(%)	Partly Agree n(%)	Fully Agree n(%)
My health, at present, depends on my medicines	193(29.0)	323(48.6)	149(22.4)
My life would be impossible without my medicines	143(21.5)	309(46.5)	213(32.0)
Without my medicines I would be very ill	243(36.5)	319(48.0)	103(15.5)
My health in the future will depend on my medicines	103(15.5)	337(50.7)	225(33.8)
My medicines protect me from becoming worse	91(13.7)	395(59.4)	179(26.9)
What concerns you about medicines?	Disagree n(%)	Partly Agree n(%)	Fully Agree n(%)
Having to take medicines worries me	52(7.8)	136(20.5)	477(71.7)
I sometimes worry about long-term effects of my medicines	97(14.6)	148(22.3)	420(63.2)
My medicines are a mystery to me	142(21.4)	227(34.1)	296(44.5)
My medicines disrupt my life	30(4.5)	87(13.1)	548(82.4)
I sometimes worry about becoming too dependent on my medicines	30(4.5)	199(29.9)	436(65.6)
What do you believe about Prescribed Medicines from qualified doctors?	Disagree n(%)	Partly Agree n(%)	Fully Agree n(%)
Doctors use too many medicines	88(13.2)	94(14.1)	483(72.6)
Natural remedies are safer than medicines	50(7.5)	269(40.5)	346(52.0)
Doctors place too much trust on medicines	71(10.7)	125(18.8)	469(70.5)
If doctors had more time with patients they would prescribe fewer medicines	140(21.1)	134(20.2)	391(58.8)
What is the harm of taking medicines?	Disagree n(%)	Partly Agree n(%)	Fully Agree n(%)
People who take medicines should stop their treatment for a while every now and again	498(74.9)	128(19.2)	39(5.9)
Most medicines are addictive	72(10.8)	134(20.2)	459(69.0)
Medicines do more harm than good	56(8.4)	160(24.1)	449(67.5)
All medicines are poisons	40(6.0)	73(11.0)	552(83.0)