



Assessment of Pharmacist-Mediated Patient Counselling on Self-Medication Practices in Kalaburagi City

Dr. Vanishree P. B.¹, Dr. Mukteshwarachary K.¹, Dr. Sachin Patil¹, Dr. Pooja V. Salimath¹, Dr. Syed Afzal Uddin Biyabani², Bhagyashree S. Nandyal³

¹Associate Professor, Department of Pharmacy Practice, Matoshree Taradevi Institute of Pharmaceutical Sciences, Kalaburagi – 585105, Karnataka, India

²Research Scholar, Department of Pharmacy Practice, Matoshree Taradevi Institute of Pharmaceutical Sciences, Kalaburagi – 585105, Karnataka, India

³Pharm D Intern, Department of Pharmacy Practice, Matoshree Taradevi Institute of Pharmaceutical Sciences, Kalaburagi – 585105, Karnataka, India

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ABSTRACT

Aim: To evaluate the prevalence, pattern, and determinants of self-medication and to assess the effectiveness of pharmacist-mediated counselling in modifying self-medication practices among adults in Kalaburagi city. **Materials and Methods:** A six-month prospective observational study was conducted among adults aged 18–60 years. A total of 589 participants were enrolled, of whom 582 completed the study. Participants were randomly allocated into a test group (n = 296) and a control group (n = 286). Baseline assessment was performed using a validated structured questionnaire. The test group received structured pharmacist counselling along with patient information leaflets (PILs), whereas the control group received PILs alone. Follow-up assessment was carried out after one month. Statistical analysis was performed using Chi-square test and paired t-test. **Results:** At baseline, self-medication prevalence was significantly higher in the test group (81.75%) compared to the control group (54.20%) ($p < 0.001$). Analgesics (34%) and antibiotics (27.45%) were the most frequently used drug classes. Post-intervention, self-medication decreased substantially in the test group from 81.75% to 44.60% (37.15% reduction), while the control group showed a marginal reduction from 47.20% to 41.25% (5.95%). Knowledge scores improved significantly following pharmacist counselling ($p < 0.001$). **Conclusion:** Self-medication is highly prevalent in Kalaburagi city. Pharmacist-mediated counselling significantly reduces unsafe self-medication practices and enhances patient knowledge. Strengthening pharmacist involvement is essential for promoting rational medication use.

Keywords: Self-Medication; Over-the-Counter Drugs; Pharmacist Counselling; Prevalence; Intervention

INTRODUCTION

Self-medication is a globally prevalent healthcare practice defined by the World Health Organization (WHO) as the use of medicinal products by individuals to treat self-recognized symptoms or illnesses without professional supervision, including the reuse of previously prescribed medications and reliance on non-professional advice¹. This practice is largely facilitated by the availability of over-the-counter (OTC) medicines².

In India, drugs not included under Schedules H, H1, or X of the Drugs and Cosmetics Act are commonly perceived as OTC and are accessible without prescription³. Although organizations such as the Organization of Pharmaceutical Producers of India (OPPI) promote responsible self-care, the absence of a clearly defined OTC regulatory framework has resulted in widespread ambiguity regarding safe medication use^{4–5}.

Socioeconomic constraints, high healthcare costs, prolonged waiting times, limited access to medical services, prior medication experience, peer influence, and aggressive pharmaceutical advertising significantly contribute to the rising trend of self-medication in developing countries^{6–8}. Despite regulatory measures such as the Drugs and Magic Remedies (Objectionable Advertisements) Act, 1954, misleading drug promotions persist^{9–10}. Community pharmacies further facilitate irrational drug use by dispensing prescription-only medicines, particularly antibiotics, without valid prescriptions¹¹.



The prevalence of self-medication in India ranges from 50–80%, with urban populations exhibiting higher rates due to easier access to pharmacies and greater exposure to advertisements^{12–14}. In Karnataka, prevalence has been reported as high as 88.6%¹⁵. Commonly self-medicated drug classes include analgesics, NSAIDs, antipyretics, antibiotics, antacids, and antihistamines^{16–18}.

While responsible self-medication may reduce the burden on healthcare systems and promote patient autonomy¹⁹, irrational use poses serious risks such as adverse drug reactions, incorrect diagnosis, masking of serious illnesses, drug interactions, toxicity, and antimicrobial resistance (AMR)^{20–23}. Pharmacists, being the most accessible healthcare professionals, are ideally positioned to mitigate these risks through patient education, rational dispensing, and counselling²⁵.

Therefore, this study was undertaken to assess the impact of pharmacist-mediated patient counselling on self-medication practices among adults in Kalaburagi city.

MATERIALS AND METHODS

Study Design and Duration: A prospective observational study conducted over six months.

Study Site: Kalaburagi city, Karnataka, India.

Study Population: Adults aged 18–60 years residing in Kalaburagi city.

Inclusion Criteria

- Willing participants
- Either gender
- Age between 18–60 years

Exclusion Criteria

- Doctors, pharmacists, and medical students
- Unwilling participants

Study Procedure

The study was carried out in the Kalaburagi city. The houses were selected randomly and marked accordingly. The study was initiated after obtaining IRB. The people were enrolled into the study by considering the study criteria after taking their written consent to participate into the study. The study involved 6 months. The study procedure was explained to the study population. The baseline study was carried out then later people were divided into two groups a test group and control group randomly. The test group had been given counseling and pills of self-medication whereas control group was aided with only pills. After this counseling was conducted and volunteers were provided with questionnaire for both groups. Scoring was done according to the answers of the volunteers. The necessary follow up was done for both test and control groups. The per capita monthly income of the families has been calculated using the information about total income of the family and number of individuals residing in their house. The formula used to calculate was

$$\text{Per Capita Monthly Income} = \frac{\text{Sum of income of working members in the family}}{\text{No. of members in the family}}$$

On the basis of the per capita monthly income, the socioeconomic status of the family from CLASS I to CLASS III was calculated for each participant using Modified B. G. Prasad's Criteria 2016 for Classification of Socioeconomic Status¹⁸ (latest version 2016) as specified in the below table.



RESULTS

A total of 589 people were enrolled into the study, of which 582 completed the study and the distribution of study population is explained in figure 1.

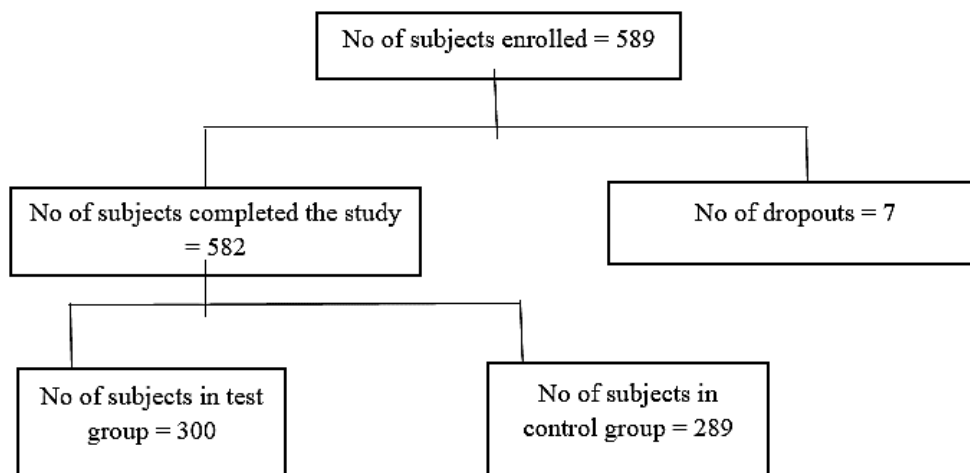


Figure 1: Enrolment of study population.

Table 1: Demographic details of the patients enrolled in the study.

Socioeconomic status class	Modified Prasad's classification 2016
I	Rs 2876 and above
II	Rs 1438-2875
III	Below Rs 1437

It summarizes the demographic details of the patients enrolled in the study such as the gender, age, educational status, socioeconomic status and the details on the self-medication in the test and control group respectively.

Table 2: Analysis of self-medication pattern among study population.

Parameters		Test group		Control group	
		No of subjects	Percentage	No of subjects	Percentage
Gender	Male	164	55.40%	157	54.89%
	Female	132	44.60%	129	45.11%
Age	16-25 yrs	36	14.87%	38	24.51%
	26-35 yrs	96	39.66%	45	29.03%
	36-45 yrs	63	26.03%	46	30.4%
	46-55 yrs	40	17.35%	23	14.83%
	56-65 yrs	7	2.81%	3	1.23%
Educational status	Illiterate	7	2.89%	20	12.90%
	Primary	22	9.09%	10	6.45%
	High School	67	27.68%	28	18.06%
	Intermediate	44	18.20%	35	22.59%
	Graduate	102	42.14%	62	40%
Socioeconomic status	Upper class	123	50.82%	22	14.20%
	Middle class	66	27.28%	98	63.22%
	Lower class	53	21.90%	35	22.58%
Habits	No Habits	203	68.58%	208	72.72%
	Alcohol	14	4.72%	24	8.39%
	Tabacco	74	25%	45	15.75%
	Alcohol+Tabacco	5	1.70%	9	3.14%



It summarizes the comparison of self-medication practices among both the test and control group respectively. Here the association between the self-medication subjects of test group and control group is found to be statistically highly significant as , Chi-square value(χ^2)=50.9574 and P value is<0.00.

Table 3: Distribution of commonly used drug classes for self-medication.

Parameters	Test group		Control group		Test of significance
	No of subjects	Percentage	No of subjects	Percentage	
Self-medication	242	81.75%	155	54.20%	$\chi^2=50.9574$ P<0.001 Highly Significant
Non Self-medication	54	18.25%	131	45.80%	

It summarizes the commonly used drug classes for self-medication in both test and control group respectively.

Table 4: Impact on self-medication before and after intervention.

Class of drugs	Name of drugs	No of subjects	% of drugs
Analgesics	Paracetamol Diclofenac	135	34%
Antiemetic	Ondansetron Domperidon	57	14.35%
NSAIDS	Aspirin Ibuprofen	32	8.06%
Antibiotics	Amoxicillin Cefotaxim	109	27.45%
Eye drops	Ciplox Eco tears	25	6.29%
Analgesic+Antiemetic	Paracetamol Ondansetron	8	2.01%
Analgesic+Antibiotic	Paracetamol Amoxicillin	12	3.02%
Eye drops+Antibiotics	Eco tears Amoxicillin	14	3.52%
Analgesics+NSAIDS	Paracetamol Aspirin	5	1.30%

It summarizes the impact on self-medication in both the test and control groups respectively, before and after intervention.

Table 5: Assessment of study population before and after intervention.

Parameters	Test group		Control group	
	No of subjects	Percentage	No of subjects	Percentage
Before intervention	242	81.75%	155	47.20%
After intervention	132	44.60%	118	41.25%

It summarizes the details of assessment of study population before and after intervention in both test and control group respectively.

Parameters	Test group	Control group
No of subjects	296	286
Before intervention (mean±SD)	92.2±39.09	110.2±38.28
After intervention (mean±SD)	178.8±40.35	134.6±58.08
Paired t-test & significance	t=5.8089, p<0.001, Highly significant	
	t=6.571, p<0.0027, highly significance	



DISCUSSION

The present study was carried out in Kalaburagi city to assess the self-medication practice. We enrolled 589 subjects where 7 were drop out. Subjects were divided randomly i.e., 296 in test group and 286 in control group. In test group 164 (55.40%) were male and 132 (44.60%) were female. In control group 157(54.89%) were male and 129(45.11%) were female. Male subjects were the major responders in our study. These results were similar to results of the reference varun et al the total subjects were 236 from which male subjects were 130(55.1%) and female were 106(44.9%).²⁶

We enrolled people above the age group of 18 yrs as per study criteria and widely distributed up to age 60 yrs. Higher number of participants were between the age group of 26-35 yrs in test group and 36-45 in control group irrespective of their gender. As age and gender distribution was uneven, there was no significance.

In our study, according to the age wise distribution, in the test group out of 242 subjects 96(39.66%) were from the age between 26-35 yrs. Where as in control group out of 155 subjects 46 (30.4%) were between the age group 36-45 yrs. The similar results were seen in the study conducted by P R Shankar BMC family in which out of 142 subjects, 42(29.6%) were age group between 20-29 yrs, and then followed by 34(23.9%) from age group 30-39 yrs.⁶ Same result was seen in accordance with article by varun et al in which 81 (34.3%) from the age group of 30-39 yrs.²⁶

In test group out of 296 subjects, 242(81.75%) were practicing self-medication where as in control group out of 286 subjects, 155(54.20%) were practicing self-medication. Self-medication is higher in test group than in control group. The association between self-medication and non-self-medication subjects was found to be highly significant ($p < 0.001$).

In test group, literacy has shown a significant role on self-medication practice, as graduates (42.14%) were highly participating self-medication. Where as in control group the same was seen as the graduate (40%) where practicing self-medication. The similar results were seen in the survey of varun et al were graduate 151 subjects 145(96.0%) practiced self-medication.²⁶

In our study we enrolled 9 classes of drug to assess the frequently used drugs in self-medication. Among which analgesic 135(34%) and antibiotics 109(27.45%) were highly used drug class in self-medication. According to another survey by Aqeen T et al ^{similar} results were seen as analgesic 187(61.1%) were highly used drugs and then followed by antibiotics.²⁷

In test, group before intervention, there were 242(81.75%) self-medicated subjects, which later decreased to 132(44.60%), which meant 37.15% stopped self-medication. As the test groups subjects were aided with pills and counselling. In control group before intervention, there were 155(47.20%) self-medicated subjects. Which later decreased to 118 (41.25%), which meant 5.95% stopped self-medication. The decrease in self-medication practice in test group was more than compared to control group. The self-medication rate decreased to 37.15% in test group and 5.95% in control group.

The mean and standard deviation score of test group before intervention was 92.2 and 39.09 and after intervention values is 178.8 and 40.35. the difference between the mean and SD for pre and post intervention is high thus indicating improvement after counselling. After applying t test the value is 5.8089 and the p value is less than 0.001 level of significance. Thus, it indicates that the difference among the test group before and after intervention is very highly significant.

The mean and standard deviation score of control group before intervention was 110.2 and 38.28 and after intervention values is 134.6 and 58.08. the difference between the mean and SD for pre and post intervention is high thus indicating improvement after counselling.²⁸ After applying t test the value is 6.571 and the p value is less than 0.0027 level of significance. Thus, it indicates that the difference among the control group before and after intervention is very highly significant.

CONCLUSION

The study highlights that self-medication is widely practiced in the community, with a significant proportion of participants relying on OTC drugs for common health problems. The intervention using patient information leaflets and counselling proved reduction in self-medication behavior, especially in the test test group, where the practice decreased by 37.15% compared to only 5.95% in the control group. These results highlight the need for sustained educational initiatives and stronger pharmacist engagement to promote safer, evidence-based self-care practices within the community.



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CONFLICT OF INTEREST: Authors claim no conflict of interest.

LIMITATIONS OF THE STUDY:

- Large population, smaller sample size and less time.
- Availability of participants and willingness to participate in the study.
- project work duration is 6 months.

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