Original Research Article

# Prevalence of Self-medication practices – A Questionnaire Based Study

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## Abstract

**Introduction:** Improper self-medication of Over the Counter (OTC) drugs and /or drugs from earlier prescription may result in adverse drug reactions and /or serious drug interactions with co-administered alternate system of drugs. **Aim:** To study the prevalence of self-medication and to determine the factors that influences the pattern of self-medication.**Materials and Methods:** This prospective study was conducted at Department of PSM at Government Medical College, Bettiah, and Jan Nayak Karpuri Thakur Medical college & Hospital (JNKTMCH), Madhepura, Bihar, India. Cross-sectional questionnaire based study, was carried out using a pretested validated questionnaire on self-medication practices on a randomly selected population.**Results:** Among the 380 participants who responded by answering to the questionnaire, 34.5% were males and 65.5% were females. Mean age of the respondents was 36.4±11.7 yrs. approximately 59.5% of the respondents self-medicated with allopathic drugs. The frequency of self-medication by the respondents ranged from once (31.3%) to more than 5 times (11.1%) in the past six months recall period. Statistically significant association was found between occupation and self-medication ($p<0.01$). The commonest symptoms for which the respondents self-medicated were headache and fever (60.2 and 42.0% respectively). Most common drugs consumed by self-medication were NSAIDs (63.71%) in which paracetamol contributed to 43.36% followed by anti-histaminics (28.31%). Private pharmacy (89.8%) was the major source of drugs for self-medication followed by left over drugs in the home (5.3%). Simpler nature of the disease was the reason given by 66.4% of the self-medicated individuals. A side effect with self-medication was experienced by 11.9% of the respondents. Alternate system of medicine was used by 24.3% respondents with self-medication. Pharmaceutical expiry date was always checked by 87.2% of the respondents.**Conclusion:** Self-medication prevalence in the community surveyed is moderately high. Joint efforts by the health careers including community pharmacists to educate the ill effect of self-medication among general public can help in reducing the practice of self-medication and betterment of the society.

**Keywords:** Prescription drugs, expiry date, adverse drug reactions, alternate system of drugs.



## Introduction

Self-medication is defined as "the use of drugs to treat self-diagnosed disorders or symptoms, or the intermittent or continued use of a previously prescribed drug for chronic or recurrent disease or symptoms"[1] World Health Organization(WHO) promotes the practice of self-medication without medical consultations for an effective and quick relief of symptoms to reduce the burden on health care service centers, which are often understaffed and inaccessible in rural and remote areas[2].Over the counter (OTC) medications are also a form of self-medication. The practice of self-medication is widely employed by people all over the world[3]. In addition to allopathic drugs, self-medication of alternate system of medicine with or without allopathic drugs is also prevalent among the people[4]. Improper use of OTC drugs and prescription only drugs by self-medication may result in adverse drug reactions and serious drug interactions with co-administered drugs. Adverse drug reactions (ADRs) are quite common not only with allopathic medicine, but can also occur when taken with alternate system of medicine due to the drug-drug interaction[5].ADRs are among the most common reasons for hospitalization and/or mortality[6]. Literature search revealed incidence of 1.3% of reported ADRs are associated with self-medication[7].Information on self- medication practices, the factors influencing the practices and incidence of ADRs associated with self-medication among the residents of Puducherry is not available. Hence the present study was undertaken with the aim to study the prevalence of self-medication among general population and to determine the factors that influences the pattern of self-medication.

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### Materials and Methods

This prospective study was conducted at Department of PSM at Government Medical College, Bettiah, and Jan Nayak Karpuri Thakur Medical college & Hospital(JNKTMCH), Madhepura ,Bihar, India. The study was approved by the institutional ethical and research committee. The study was conducted from September 2020 to August 2021. An informed and written consent was taken from all the participating subjects prior to the commencement of the study.

The study was a community based cross-sectional questionnaire based study. Sample size thus calculated was 291 and anticipating non-response, incomplete data collection, the sample size has been kept at 400.

**Inclusion criteria**

1. 18 yrs. of age
2. Both Male and Female.
3. Willingness to participate in the study

**Exclusion criteria**

1. Psychiatric patients
2. <18 yrs. of age
3. Not willing to participate in the study
4. Very sick and bed ridden patients

A pretested validated questionnaire was used for data collection. The respondents were interviewed in the local language. Demographic details of the participants, their response on self-medication practices on allopathic and alternate system of medicine, commonly self-medicated drugs, reasons, purpose and source of initiation for self-medication, awareness on ADR and expiry date of pharmaceutical preparations, incidence of adverse effect associated with self-medication were recorded. The respondents were advised to provide single or multiple responses (if more than one option is right).

The collected data were entered in MS Excel master sheet and analyzed using SPSS Version 16.0. The descriptive statistics for categorical variables were explained in the form of percentages and proportions whereas; mean and standard deviation were used for continuous variables. Inferential statistics using chi- square test was applied to find any significant association for categorical variables and $p<0.05$ was considered as significant.

**Results**

Responses were obtained from 380 participants. The mean age of the respondents was 38±14 yrs. Among the respondents 131(34.5%) were males and 249 (65.5%) were females. Percentage of married and unmarried respondents were 292(76.8%) and 88(23.2%) respectively. Out of 380 participants, 226 (59.5%) self- medicated themselves with allopathic drugs. The mean age of the self-medicated respondents was 36.4±11.7 yrs. Male and female self-medicated respondents were 64(48.8%) and 162(65.1%) respectively. The frequency of self-medication by the respondents ranged from once (70 respondents, 31.3%) to more than 5 times (25 respondents, 11.1%) in the past six months recall period. There was a statistically significant association between occupation and self-medication ($p<0.001$), whereas no significant association was found between income and education status of the participant to self- medication ($p>0.05$) (Table –1).

**Table 1: Sociodemographic characteristics**

| S. No | Parameter | SM, Yes n (%) | SM, No n (%) | X2 | P value |
|---|---|---|---|---|---|
| 1. | **Occupation** | | | **21.02** | **0.0001*** |
| 1.a. | Non-skilled | 107(47.3) | 77(50) | | |
| 1.b. | Skilled | 93(41.2) | 43(27.9) | | |
| 1.c. | Retired | 1(0.4) | 13(8.4) | | |
| 1.d. | Student | 25(11.1) | 21(13.6) | | |
| 2. | **Education** | | | **4.891** | **0.299≠** |
| 2.a. | Illiterate | 10(4.4) | 14(9.1) | | |
| 2.b. | Primary schooling | 17(7.5) | 9(5.8) | | |
| 2.c. | High school | 85(37.6) | 50(32.5) | | |
| 2.d. | Graduate | 95(42.0) | 64(41.6) | | |
| 2.e. | Post graduate | 19(8.4) | 17(11.0) | | |
| 3. | **Annual Income** | | | **6.805** | **0.078≠** |
| 3.a. | <10000 | 80(35.4) | 55(35.7) | | |
| 3.b. | 10,000 - 30,000 | 99(43.8) | 70(45.5) | | |
| 3.c. | 30,000 - 60,000 | 12(5.3) | 19(12.3) | | |
| 3.d. | >60,000 | 8(3.5) | 2(1.3) | | |
| 3.e. | Students | 27(11.9) | 8(5.2) | | |
| | **Total** | **226(100)** | **154(100)** | | |

The common symptoms for which the respondents self-medicated were headache and fever (60.2 and 42.0% respectively) (Table-2).

**Table 2: Illness for which self-medicated**

| S. No | Illness for which self-medicated | n | % |
|---|---|---|---|
| 1. | Cough, cold, flu | 92 | 40.7 |
| 2. | Fever | 95 | 42 |
| 3. | Throat pain | 15 | 6.6 |
| 4. | Headache | 136 | 60.2 |
| 5. | Diarrhoea | 7 | 3.09 |
| 6. | Others (conjunctivitis, asthma, constipation, ear ache, gastritis, myalgia, motion sickness) | 70 | 31 |

Out of 226 self-medicated participants, the most common drugs consumed by self-medication were NSAIDs (63.71%) in which paracetamol contributed to 43.36% followed by antihistaminics (28.31%). The various other NSAIDs consumed by self- medication were diclofenac, aceclofenac, ibuprofen, mefenamic acid. Some of the Fixed Drug Combinations used by self-medications are Action-500, anacin, metacin, saridon, combiflam. Private pharmacy 203(89.8%) was the major source of drugs for self- medication followed by left over drugs in the home 12(5.3%).

When questioned about the reasons for self- medication, disease was simple was the response given by 66.4% of the self-medicated individuals. Other reasons given by the respondents were lack of trust in medical services and urgent need of drugs. Majority of the respondents, self-medicated by their own initiative (53.5%) (Table-3). Out of 226 self- medicated respondents, 27(11.9%) said they experienced side effect with self-medicated drugs. Awareness on side effects of self-administered drug was present only among 122(53.98%) participants. Alternate system of medicine was used by 55(24.3%) respondents who were self-medicated. Among the 55 respondents using alternate system of medicine, 13(5.8%) were aware of drug interaction between alternate and allopathic drugs when co-administered. Pharmaceutical expiry date was always checked by 197(87.2%) of the respondents, 24(10.6%) respondents never checked the expiry date while 5(2.2%) respondents at times checked the expiry date.

**Table 3: Source of Initiation for self-medication**

| S. No | Source of initiation | n | % |
|---|---|---|---|
| 1 | Own initiative | 121 | 53.5 |
| 2 | Family / friends / neighbours | 92 | 40.7 |
| 3 | Pharmacist (pharmacy shops) | 26 | 11.5 |
| 4 | Previous prescription | 13 | 5.8 |
| 5 | Media – Newspaper, TV, radio, etc | 3 | 1.3 |

## Discussion

The study was conducted to estimate the prevalence and the factors that influence the pattern of self-medication. Self-medication was practiced by 59.5% of individuals in the past six months recall period. This was similar to the study conducted in Nepal with the prevalence rate of 62% and 59% respectively[9,10]. But contradicts the finding in the study done in coastal regions of South India where the prevalence rate was 71%[8].The study result had shown a higher percentage of self-medication practice was among females than males. It was similar to the study done in coastal regions of South India and Spain but contradicts the finding in the study done in North India[8,11,9]. This may be because females suffer from many acute and chronic conditions than men and this has led to more drug use[12].

Regarding self-medication frequency, 31.3% self- medicated once and 11.1% self-medicated more than five times in the past six months recall period. The findings were different when compared to the study done in coastal regions of South India in which 60% of the respondents self-medicated once[8]. Self-medication practice was high among non-skilled workers than students, skilled workers and retired persons. The predominance may be due to lack of knowledge and awareness on side effects and other complications associated with self-medicated drugs. There was a higher percentage of self-medication practices among literate respondents who have completed high- schooling than illiterates. This finding is not at par with another study in which self-medication practices was higher among illiterates[13].Literates consider the illness as simple and most of the time self-medicate themselves to avoid unnecessary hospital expenses. Based on income, middle class family self-medicate more when compared to other income groups which was similar to the observations from a study done in china[14].

Headache, fever, cough and flu are the most common reasons for self-medication among participants. Similar observations were also made in other studies[10,13]. NSAIDs was the most common drug consumed by self-medication which was at par with other studies[9,15].The disadvantage with NSAIDs were improper use may cause gastritis and nephrotoxicity. Consumption of antibiotics by self-medication was also high in our observation. Irrational use of antibiotics may result in increased incidence of bacterial resistance.

Our study also focused on side effects associated with self-medication and co-administration of alternate system of medicine with allopathic drugs. The later was followed by 24.3% of respondents which was high when compared to the study done by Ahmad, et.al., in which there was a practice of 12%[9].Though alternate system of medicine is mainly used for chronic ailments and considered less toxic, risk of drug interaction may be present with co-administration of allopathic drugs[16]. Forty-two respondents using alternate system of medicine were unaware of the drug interaction between co-administration of allopathic and alternate system of medicine. Nearly 46.1% of the respondents were unaware of the side effects associated with self- medication and 11.9% of the self-medicated individuals experienced side effects. The incidence was lower than the study done in France which was 17.6%[17]. Awareness on side effects due to improper use of medications should be created among general public to prevent untoward occurrences.

Similar to various studies done on self-medication practices, the source of drug was private pharmacy and the participants self-medicated because of the simpler nature of the illness[9,18].

Awareness of public on expiry date of Pharmaceuticals revealed 87.2% of the respondents checked the expiry date of Pharmaceuticals. Though Pharmaceutical laws are strict regarding the sale of expired products, it is the consumer responsibility to check for the expiry date at the time of purchase. The practice was appreciably good in the population surveyed.

Risks associated with self-medication are inaccurate diagnosis, inappropriate medication that causes side effects, masking of serious condition symptoms, inaccurate dosing and sometimes accidental overdose, risk of abuse and risk of developing addiction[19].It is high time, awareness should be created on ill effects of self-medication among general public. Sensitization program should be conducted to private pharmacy firms regarding the medicines that can be sold as over the counter and prescription medicines. Hence life-threatening complications arising because of self-medication can be reduced. Urban and rural health centers can disseminate the information on ill effects of self-medication through health nurses to the households in the area to which they are allocated. Strict laws should be enforced to completely stop the OTC sale of prescription only medicines.

## Conclusion

Self-medication prevalence in the community surveyed is moderately high. Easy availability of prescription only drugs may increase the risk of side effects which may be restricted by effective laws. Joint efforts by the health careers including community pharmacists to educate the ill effect of self-medication among general public can help in reducing the practice of self-medication and betterment of the society.

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