

An Investigation- Association of Sociodemographic Variables with The Practice of Self – Medication among Non- Teaching Staff in a Tertiary Care Teaching Hospital of Northern Haryana

Jayant Kumar Kairi¹, Manmeet Kaur², Amit Kaushik³

¹Professor and HOD, Department of Pharmacology, Kalpana Chawla Govt Medical College Karnal, Haryana, India

²Assistant Professor, Department of Pharmacology, Kalpana Chawla Govt Medical College Karnal, Haryana, India

³Junior Professor, Department of Community Medicine, Dr Ram Manohar Lohia Institute of Medical Sciences, Lucknow

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Corresponding author: Dr Manmeet Kaur

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Abstract

Background: Self-medication is a common practice. Most of the time no serious harm occurs. But sometimes it can be dangerous. It seems natural and logical that the staff working in close proximity to the indoor patient departments (IPD) and outdoor patient departments (OPD) should be able to consult the doctors easily. But a preliminary look at the Outdoor patient department (OPD) registrations were indicative of the trend that there were fewer registrations from the non-teaching staff of our college. We hypothesized that the reason could be self-medication. Furthermore, we could not find any study that investigated the pattern of self-medication in persons working in or in close proximity of a hospital. The present study was planned to determine the extent and understand the various aspects of the practice of self-medication among the non-teaching staff.

Aims and Objectives: To determine the pattern of self-medication amongst the non-teaching staff at a tertiary care teaching hospital in Northern Haryana and to document the factors that motivate them to self-medicate.

Methods: The data on self-medication was acquired using a self-designed validated questionnaire. Subsequently, the data were entered in Microsoft excel spreadsheet, coded and analyzed using SPSS 23. Descriptive analysis was carried out for the socio-demographic factors, frequency of self-medication, indications for practicing self-medication, most common medications used for self-medication, sources of information and influencing factors along with the attitude towards self-medication. We also studied the association between the various parameters mentioned in the sociodemographic profile with the practice of self-medication.

Conclusion: Our study has shown that the practice of self-medication is prevalent to the extent of 81.4% among the non-teaching staff of our college. We found that there were quite a few reasons why people self-medicate. Our finding of association of larger family size with greater prevalence of self –medication is novel.

Key Message: Self-medication has emerged as an important practice in all the strata of the society. Self- medication with its advantages also has its short comings too. We tried to assess

the prevalence pattern of this behavior of the people working in close proximity with the physicians. Various public programs should be launched to bring about awareness in masses about this fact. As they say charity begins at home, we can take the initiative by conducting these programs first in our tertiary care center and then move on to rest of the public

Keywords: Knowledge, Attitude, Practice, Self-medication, Non-teaching staff.

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Introduction

Self-medication is becoming an increasingly important area within healthcare [1,2]. It can affect the primary care, both in negative and positive ways. Positive, if the ailment was minor and transient. Negative, if the disease is serious and self-medication delays proper treatment. The term 'self-medication' refers to the use of nonprescription medicines, usually over the counter (OTC) drugs, to treat minor ailments without consulting a medical practitioner and without medical supervision [3]. A more appropriate definition as per the WHO guidelines is, "*the use of medications without prior medical consultation regarding indication, dosage, and duration of treatment is referred to as self-medication*". Self-medication is thought to reduce the load on the medical services, decrease the time spent in waiting to see the physician, and saves cost especially in economically deprived countries with limited health resources [4].

Self-medication suggestions and motivations come from families, friends, neighbors, the pharmacist, previously prescribed drugs, advertisements in news, popular magazines and lack of availability of qualified healthcare professionals at close distance [5]. Practice to self-medicate is also known to be influenced by education level, gender, age and socio-economic status [6]. The most commonly used drugs for self-medication include analgesics, antibiotics, cough syrups etc [7]. They also include the use of a wide range of complementary and alternative medicine (CAM) such as herbal medicines (herbs or herbal preparations), nutritional supplements,

traditional products, and home remedies. Herbal products are frequently used for self-medication because of their easy availability and accessibility [8,9]. People have common knowledge about herbal remedies and think that herbal products are safe and devoid of any side-effects [7]. The most important determinants for self-medication are mild symptoms of disease, self-diagnosis of disease symptoms, previous use of medicines and easy access to non-prescribed medicines. The most important groups of diseases for which patients are known to self-medicate are respiratory diseases, common cold and headache [10]. At numerous places, self-medication is known to serve a useful purpose. In India however, the story is different because prescription drugs are commonly dispensed without a valid prescription [11]. The reasons for using self-medication are poorly understood. Most studies point to lax regulations about medication, and inadequate access to health care, as the main reason [12]. Many factors are considered to be responsible for the increase in the practice of self-medication the world over. These factors include economic, political, and cultural factors, turning this practice into a major public health problem [13]. According to the drug laws in India, self-medication is permitted for over the counter (OTC) drugs. However, there is no specific list of over-the-counter drugs. The OTC Committee of the Organization of Pharmaceutical Producers of India are making an effort towards the promotion of rational self-medication and to make the general

public as well as the government aware of related issues [14]. Taking cognizance of the hazards of self-medication, Indian drug regulator CDSCO (Central Drug Standard Control Organization) is planning to bring out more stringent rules about drugs that can be sold without a doctor's prescription. The Drugs and Cosmetics Rules are planned to be amended to incorporate these changes [15]. Several studies describing the Knowledge, Attitude and Practice (KAP) of Self Medication have been carried out in various parts India, but none of them investigated the pattern of self-medication in persons working in or in close proximity of a hospital [16,17]. It seems natural and logical that the staff working in close proximity to the indoor patient departments (IPD) and outdoor patient departments (OPD) should be able to consult the doctors easily. However, the data from OPD registrations indicated that there were fewer registrations from the non-teaching staff of our college. We hypothesized that the reason could be self-medication. The present study was planned to determine the extent as well as understand the various aspects of the practice of self-medication among the non-teaching staff, of our college.

Material and Methods

Study Tool

The study was questionnaire-based.

Study design and population

A descriptive cross-sectional study was conducted among non-teaching staff working in various departments of a tertiary care teaching hospital. Two hundred and fifty-three participants took part in the study. The sample size for this study was determined by using single population proportion formula ($n_1 = z^2 p (1-p)/d^2$) with the following assumptions $z = 1.96$ for 95% confidence interval, proportion of self-medication (p) = 0.8(80%) and required margin of errors (d) = 0.05.[18]The sample size so determined came out to be of 245 participants. To be on the

safer side, 5% extra were taken and thus two hundred and fifty-three participants were contacted. We obtained written consent from them. Ethical approval was taken from the Institutional ethics committee.

Inclusion Criteria

All the staff that were currently not taking any prescription medicine and were willing to take part in this questionnaire-based study were included in the study. It is understood that a person who has a prescription for medicines that he/she is taking has already consulted a doctor for the ailment. Hence, he/she could not be considered to be self-medicating.

Exclusion Criteria

All the Non-teaching staff not willing to participate in the study. In addition, the staff that were suffering from any chronic illness or were currently on some prescription drugs were excluded from the study. The reason being that all the patients on chronic treatment do need periodic reviews and may be consulting the doctors for other ailments too.

Methodology

A structured self-administered questionnaire was used to collect the data. We divided the questionnaire into two parts. The first part contained information about the sociodemographic characteristic of the participants, such as age, sex, education level and income level. The second section of the questionnaire comprised domains; that included knowledge, attitude and practice of self-medication. Knowledge part comprised of reasons of self-medication and vital information. The attitude component included sources of information of self-medication. The practice part included common medicines taken for self-medication used, most common ailments for which the self-medication was practiced and influencing factors for the selection of self-medication.

Statistical Analysis

Data was analyzed using Descriptive Statistics using SPSS 23 version.

Data Confidentiality

We entered all the data in especially designed format and have ensured confidentiality of all the study participants.

Results

Sociodemographic characteristic

Two hundred and fifty-three questionnaires were distributed to assess the self-medication practice amongst the non-teaching staff. Maximum number of study participants were from the age group of 21 to 30 years (145,

57.3%). The male to female ratio of the participants in the study was approximately 3:2 (152 males, 101 females). The educational qualifications of most of the participants were post-graduation and above (126, 49.48%). Eighty-five percent of the participants in the study had income above INR. 10,000 per month, modified BG Prasad Class -I.[19] Notably, 173 out of the 253 study subjects had either 5 or less than 5 members in their family. (Table 1)

We recorded that in our study out of 253 participants, 206 practiced self-medication hence indicative of a prevalence of 81.4%.(Table 2)

Table 1: Socio demographic characteristics

S. No.	Variable	Number (%)
1	Age \leq 30 >30	145 (57.3) 108 (42.7)
2	Gender Male Female	152 (60.1) 101 (39.9)
3	Education 1. Matriculation or lower 2. Higher Secondary to Graduation 3. Post Graduation	66 (26.1) 61 (24.1) 126 (49.8)
4	Income 1 <10,000I NR 2 >10,000 INR	38 (15.0) 215 (85.0)
5	Family Members \leq 5 >5	173 (68.4) 80 (31.6)

Common indications for indulging in self-medication

We observed that the commonest symptom of self-medication was headache. (192, 75.9 %) followed by complaints of Cough and cold that were asked collectively in the questionnaire (175, 69.2 %). Next in the line of symptoms for which self-medication is practiced are those of fever and stomachache (163, 64.4%).

Thus, the total number of indications for self-medication were 3.96 indications per person. (Table 2)

Reason for self-medication

The most frequently reported reason that leads to the practice of self- medication was

an assumption of minor illness (193, 76.3%). This was followed by certain respondents presuming that they had sufficient pharmacological knowledge (152, 60.1%) followed closely by those who wanted quick relief of symptoms (144, 56.9%). (Table2)

Types of self-medication used in the last one month

The total self-medication events recorded during one-month period were 603 for a total of 206 participants who took medicines on their own, without medical consultation. Thus, on an average the number of events per person in one-month duration works out to 2.38. The most commonly used classes of medicine for self-medication were cosmetic

products (109, 43.1%) followed by vitamins (40.7 %), analgesics (38.3%), antipyretics (32.4%) and antibiotics (18.6 %) (Table 2)

Sources of information

Information from friends was reported as major sources of information, about the medicines used for self-medication practices by a majority of the respondents (174, 78.8%) followed by information from internet (162, 64.0%). (Table 2)

Table 2: Details of various aspects of self-medication in current study

Aspects of study											
Frequency		Indication		Reason		Medicines type used		Source of information		Influencing factors	
	No. (%)		Number (%)		Number (%)		Number (%)		Number (%)		Number (%)
Not used Self-medication	47 (18.6)	Headache	192 (75.9)	Minor illness	193 (76.3)	Cosmetic product	109 (43.1)	Friends	174 (78.8)	Opinion of family	174 (68.8)
1-2 times	104 (41.1)	Cough, Cold	175 (69.2)	Sufficient pharmacologic knowledge	152 (60.1)	Vitamins	103 (40.7)	Internet	162 (64.0)	Opinion of friends	154 (60.9)
>2 times	102 (40.3)	Fever Stomach ache	163 (64.4)	Quick relief	144 (56.9)	Analgesics	97 (38.3)	Advertisement	141 (55.7)	Recommendation by local	72 (28.5)
Total	253 (100)	Diarrhea	65 (25.7)	Lack of time to consult doctor	123 (48.6)	Antipyretics	82 (32.4)	Old prescription	80 (31.6)	Previous doctor's	116 (45.8)
		Menstrual Symptoms	36 (14.2)	Cost effectiveness	60 (23.7)	Antibiotics	47 (18.6)	Academic Knowledge	107 (42.3)	Own experience	128 (50.6)

		Rash/ Allergies	37 (14.6)	Easy availability of medicine	137 (54.2)	Antacids	42 (16.6)			Advertisem ent	132 (52.2)
		Anxiety	14 (5.5)	Emergency use	138 (54.5)	Antiemetics	26 (10.3)				
		Ear Problems	18 (7.1)	Others	58 (22.9)	Anti- allergic	38 (15.0)				
		Vomiting	36 (14.2)			Sedatives	10 (4.0)				
		Eye infections	23 (9.1)			Ophthalmic preparations	26 (10.3)				
		Skin problems Tooth	35 (13.8)			Others	23 (9.1)				
		Insomnia	24 (9.5)								
		Pain	153 (60.5)								

Influencing Factors for the selection of medication

Table 2 depicts how the influencing factors affect the selection of an agent for self-medication. In our study (174,68.8%) respondents out of the total, sought the **Attitude towards self- medication**

In the present study (224,88.5%) of the respondents believed that self- medication is a part of self-care, yet, only 206 actually used

opinion of family members while selecting a drug for self-medication while 60.9 % sought the opinion of friends.

some or the other form of self-medication. Approximately 76% i.e. 193 participants believed medicines could be consumed on the

advice of family and friends. In our study 63.2% of the respondents mentioned about their knowledge related to the side effects of the self-medicated drugs. Almost half the

respondents (51%) showed concern that increasing drug dose can be hazardous to health. (Table 3).

Table 3: Attitude towards Self-medication

S. No.	Attitude	Number(%)
1	Agree self-medication to be a part of self-care	224 (88.5)
2	Agree that they advise regarding self-medication to their family and friends	193 (76.3)
3	Agree that they have an idea about which drugs have side effects	160 (63.2)
4	Are concerned that increasing drug dose can be hazardous to health	129 (51.0)
5	Agree that a physician's help must be taken in case of side effects	69 (27.3)
6	Think mild medical problems do not need drug treatment	54 (21.3)
7	Agree that physician opinions can be overlooked	55 (21.7)
8	Agree that taking medicines without proper knowledge is harmful	64 (25.3)
9	Agree that medicines should not be available without prescription	59 (23.3)

Association of Self Medication with Sociodemographic variables

Our study investigated the association of age, gender, educational background and the number of family members with self – medication. It is notable from Table 4 that a bigger family size is statistically significantly associated with self-medication. ($p < 0.05$). Though the participants with income more

than INR.10000 per month and post-graduate degree qualification practiced more self-medication, it was by chance only. The educational status as well monthly income was not statistically significantly associated with self-medication. (Table 4)

Table 4: Association of Self-Medication with Socio-demographic variables

Socio Demographic Variable	Self-Medication		Total	Test of Significance
	Yes	No		
Age				
≤30	118 (81.4)	27 (18.6)	145	0.00 Df=1 P= 0.98
>30	88 (81.5)	20 (18.5)	108	
Gender				
Female	82 (81.2)	19 (18.8)	101	0.006 Df=1 P=0.94
Male	124 (81.6)	28 (18.4)	152	
Education				
1	54 (81.8)	12 (18.2)	66	0.33 Df=2 P=0.84
2	51 (83.6)	10 (16.4)	61	
3	101 (80.2)	25 (19.8)	126	
Income				
1	28 (73.7)	10 (26.3)	38	1.77 Df1 P=0.18
2	178 (82.8)	37 (17.2)	215	
Family Members				
≤5	145 (78.0)	38 (22.0)	173	4.15 Df=1
≥6	71 (88.8)	9 (14.9)	80	

				P=0.04
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*Statistically significantly if $p < 0.05$

Discussion

All the 253 enrolled participants turned in filled up questionnaires, thus giving us cent per cent response rate. The studies conducted by Bogale *et al* showed a response rate of 98.3% [20]. We recorded a prevalence of self-medication practices to the tune of 81.4%. These results were comparable to the study carried out by Araia *et al* in whose study the prevalence of self-medication was 79.2% among the medical students [18]. Similar prevalence rate was reported in another study conducted amongst the medical students in South India [21]. Almost 89.6% students of health sciences in Iran practiced self-medication [22]. In a study, conducted in the same geographical area as ours where the study population included urban population only, the prevalence rate of self-medication recorded was recorded to be 92.8% [16]. However in another study, where both urban and rural areas were combined, the prevalence recorded was 90% [17]. It is therefore, evident that self-care, more precisely self-medication is becoming increasingly common in India irrespective of the geographical location. Majority of the participants in our study belonged to a younger age group. Study reports from North India and South India supported the fact that younger age group practiced self-medication more [23,24]. In our study more than two incidences of self-medication in a month were reported by 102 respondents. This is similar to the study conducted by Jain *et al* in Haryana [17]. Respondents in our study used self-medication for headaches, cough, cold and fever. Niroomand *et al* in Iran from a survey of nearly 400 medical students also reported similar findings [25]. Seam *et al* reported that headache, cough & cold followed by fever were the most common reasons for self-medication among the pharmacy students in Bangladesh [26]. Our study corroborates the findings of previous such studies. It is

possible that in our study, the respondents, due to their frequent interaction with doctors, nurses, pharmacists feel more confident to practice self-medication. Minor illness, sufficient knowledge, desire to get quick relief are few reasons that motivated our respondents for self-medication. Familiarity with the treatment and emergency use were cited as common reasons for self-medication in a prospective, cross-sectional, survey-based study conducted by Sridhar *et al* in the general population in UAE [27]. In many studies conducted among the health care workers, access to medicines encourages self-medication [28]. In our study it was noted that dermatological preparations, vitamins, analgesics and antipyretics lead the list of drugs subjected to self-medication. In the study conducted by Lukovic *et al*, the results were almost comparable, with analgesics, vitamins and antipyretics being the major group of medicines being used for self-medication by the medical students in Serbia [29]. Less frequently used drugs were antibiotics, antihistamines and antacids. Close friends are the providers of knowledge and source of information for self-medication in our study participants. In the present study, they could be from the medical fraternity as most our participants were associated with them one way or the other. This was followed by media sources like the internet and advertisement. Jembur *et al* had deduced that pharmacy professionals were the main source of information for the self-medication in an urban population in Ethiopia [30]. In another study conducted in South India, the pharmacists were instrumental in maintaining the practice of self-medication [21]. The study done on Bangladeshi pharmacy students has mentioned that old prescriptions about the similar illness and previous knowledge were the major determinants for self-medication [26]. In addition, a systematic review

conducted by Limaye D *et al.* also found that pharmacists were the primary sources of information on self-medication [31]. Thus, working alongside medical professionals contributed in perpetuating this practice. Studies have shown that more educated people tend to self-medicate more by seeking information from various sources [18]. In our study, most of our respondents had adopted the practice of self-medication as a part of self-care, followed by those who were following the advice of the family and friends. Therefore, it depicts a positive attitude among the participants. On searching the literature, it is found that an inclination towards self-care is one of the most common reasons that provide impetus for adopting this practice [21,32,33]. The common influencing factors in promoting self-medication were the opinion of the family members and friends. In a study conducted on the nursing students in Spain, the family members were the ones who guided them regarding the self-medication [34] In a systemic review conducted by Torres *et al.*, concerning the practice of self-medication in low and medium-income countries which included India, it was found that advice from family and friends was one of the major reasons to practice self-medication [35]. Larger family size matters in self-medication. In our study we found that families with more number of family members tend to self-medicate more. This association achieved statistical significance also. To the best of our knowledge and understanding, this is a novel finding. Though we could not investigate the reason behind this, it could be that large families have a larger amount of unused medicines which are later on passed on as a part of self-medication. The greater number of family members may have greater episodes of sickness in a given time and hence greater self-medication. Surprisingly for us, the age, gender, education or income did not have a statistically significant effect on the practice of self-medication in our study. Other studies that we

referred to, also tried to explore the association between the various demographic factors and practice of self-medication. In one study conducted in the town of Alexandria, Egypt highly statistically significant association was found for gender, age, occupation and the presence of chronic disease with the practice of self-medication. However, this study did not investigate family size as a factor affecting self-medication [36]. The practice of self-medication has important implications on primary healthcare because the patients may misdiagnose themselves or use inappropriate dosages.²Primary care and family physicians need to be proactive in seriously information on self-medication.

Conclusion

Our study has shown that the practice of self-medication is prevalent to the extent of 81.4% among the non-teaching staff of our college. We found that there were quite a few reasons why people self-medicate. Our finding of association of larger family size with greater prevalence of self-medication is new and has not been reported yet.

Limitations

The study was conducted in a sample of participants working in a non-teaching capacity in a teaching hospital in an urban area. Hence, the findings may not be generalizable to the population at large. The study might also be prone to recall bias as a result of self-reporting of the participants for their last one-month experiences.

Authors' contributions

JKK was involved in the conception, design, analysis, interpretation of data, report and manuscript writing. AK was involved in the analysis, interpretation of the data, report and manuscript writing. MK was also involved in the design, analysis, interpretation of the data, and manuscript writing. All authors read and approved the final manuscript.

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