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STUDY ON SELF- MEDICATION PRACTICE AND ASSOCIATED FACTORS AMONG HOUSEHOLDS IN HELAMBU RURAL MUNICIPALITY

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ABSTRACT

Background and Aim: Self-medication is an important health issue especially in developing countries. Inappropriate self-medication may lead to incorrect self-diagnosis, delays in seeking appropriate care, dangerous drug interactions, risk of dependence, drug abuse, incorrect dosage and choice of medication. The present study determined the prevalence and factors associated with self-medication practice. **Methodology**: A community based quantitative cross-sectional study was conducted among household (sample size: 366) of Helambu Rural Municipality for 6 months. A semi-structured closed ended questionnaire was employed to gather the necessary information. Descriptive statistics mean percentage and frequency were calculated. Association between socio-demographic characteristics and self-medication practice was calculated by using Chi-square test. **Results**: 76% of the study participants had practiced self-medication and were higher in 31-40 years old (77.3%). Majority of the participants were with secondary level of education (44.26%), engaged in service (29.50%) and business holders (29.20%), and belonged to nuclear family (61.70%), Hindus (56.01%) and Janajati (58.46%). Family

members (42.35%), previous experience of theirs (33.61%) were the major sources of self-medication. Self-habit (42.1%), unavailability of doctors (27%) as required, difficult in travelling to visit doctors (20.5%) were the reasons for practicing self-medication. Common cold, fever, headache, tonsillitis, and gastritis (81.9%) were the main ailments and analgesic, antacid/PPI, and anti -cold medicine (81.9%) were the major drugs used for self-medication. Lastly, age, occupation and education were the factors significantly associated with self-medication practice ($p<0.05$). **Conclusion**: The prevalence of self‑medication among households at the study site was high. Age, occupation and education were the factors significantly associated with self-medication practice among the households. Hence, Future research focused on interventions to create awareness about self‑medication and other research should be performed in various seasons and for longer periods

KEYWORDS: *Self-medication, Prevalence, Knowledge, Attitude, Practice.*

INTRODUCTION

Self-medication is defined as the selection and use of medicinal products by the consumer to treat self-recognized illnesses or its symptoms, or the intermittent or continued use of a medication prescribed by a physician for a chronic or recurring disease or symptom (***Shaghaghi et al., 2014***). Self-medication is an important health issue especially in developing countries. A systematic review reports indicated that prevalence of SMP was high globally and varies from 32.5 to 81.5% (***Suleiman AK, 2013***). Self-medication can help to treat minor ailments that do not require medical consultation and hence reduce the pressure on medical services, particularly in the deprived countries with inadequate health care resources. For minor illnesses, it often provides a cheap, rapid, and convenient solution, could save waiting times for consumers to see the doctor, and save scarce medical resources from being used on minor conditions (Lei et al., 2018). In a number of developing countries, many drugs are dispensed over the counter without medical direction (***Jember et al., 2019***). Self-medication practices (SMP) are highly prone to inappropriate use and have its own drawbacks resulting wastage of resources, increase drug resistance pathogens and adverse reactions. It can also lead to incorrect self-diagnosis, delays in seeking appropriate care, dangerous drug interactions, and risk of dependence, drug abuse, incorrect dosage and choice of medication (***Mamo et al., 2018***).

There is always risk of unknown interactions between active ingredients present in OTC drugs and prescription medicines as well as increased risk of worsening of existing disease pathology (***Ahmad et al., 2012***). Most people limit their self-medication behaviors to the use of over-the-counter drugs for everyday health complaints such as colds or headaches and other minor ailments. However, some people use prescription only drugs and illegal substances to self-medicate for serious problems such as severe pain, depression, anxiety disorders or bipolar disorder (***Amaha et al.2019***).

Self-medication is widespread practice particularly in economically deprived communities. The prevalence of self-medication has dramatically increased throughout the world. Reports showed that up to 80% of all drugs are purchased without any prescription in developing countries, (***Divya et al., 2016***) which is supported by reports that (***Gupta et al., 2016 & Kafle et al., 1996***) the prevalence of self-medication in developing countries is in the range of 12.7% to 95%.

Self-medication has become an important public health problem in many countries, as well as in Nepal. There is little information regards to the prevalence and associated factors of self-medication in Nepal. Therefore, aim of this study was to determine the prevalence and factors associated with self-medication practices among household of Helambu rural municipality, Sindhupalchok district of Nepal.

The objective of the research is to assess the self-medication practice in Helambu Rural Municipality of Sindhupalchok district. The specific objectives are.

- To find out the socio-demographic characteristics of respondents.
- To assess the prevalence of self-medication practice.
- To evaluate the knowledge about appropriate self-medication practice.
- To assess the practice about appropriate self-medication practice.
- To assess the attitude about appropriate self-medication practice.
- To identify the factor affecting SMPs.

Research Hypothesis

Null Hypothesis (Ho): There is no significance association between socio-demographic characteristics of the participants and self -medication practice.

Alternative hypothesis (H_1): There is significance association between socio-demographic characteristics of the participants and self- medication practice.

METHODS AND METHODOLOGY

Study Design: The study was community based quantitative cross-sectional study.

Study Area: The study was conducted in all the seven wards of Helambu Rural Municipality of Sindhupalchok district.

Study Duration: The study was conducted for 6 months.

Study Population: All the households in Helumbu rural municipality was the source population whereas selected households in the seven wards of the municipality were the study population.

Sample Size: The total household number (N) in all the seven wards of the Helambu Rural Municipality is 4203{***Helambumun.gov.np. 202. Population census 2068 [online] Available at: <https://helambumun.gov.np*** The sample size for the study is calculated using Yamane formula for finite population: {Yamane, Taro. 1967. Statistics, an Introductory Analysis, 2nd Ed., New York: Harper and Row}

n = N/(1+N(e)2.

Where, n = sample size

N = population size

e = level of precision (i.e. usually 5%)

The final sample size is found to be 365.24. So, a total of 366 households will be the sample of the study.

Sampling procedure: After sample size determination, the total sample size, 366, was proportionally allocated among all the seven wards based on the size of the households.

Accordingly, the interval was determined through dividing the total households to the total sample sizes All Seven ward were selected for the data collection. Based on the proportionate sampling, sample was taken as mentioned in above table.

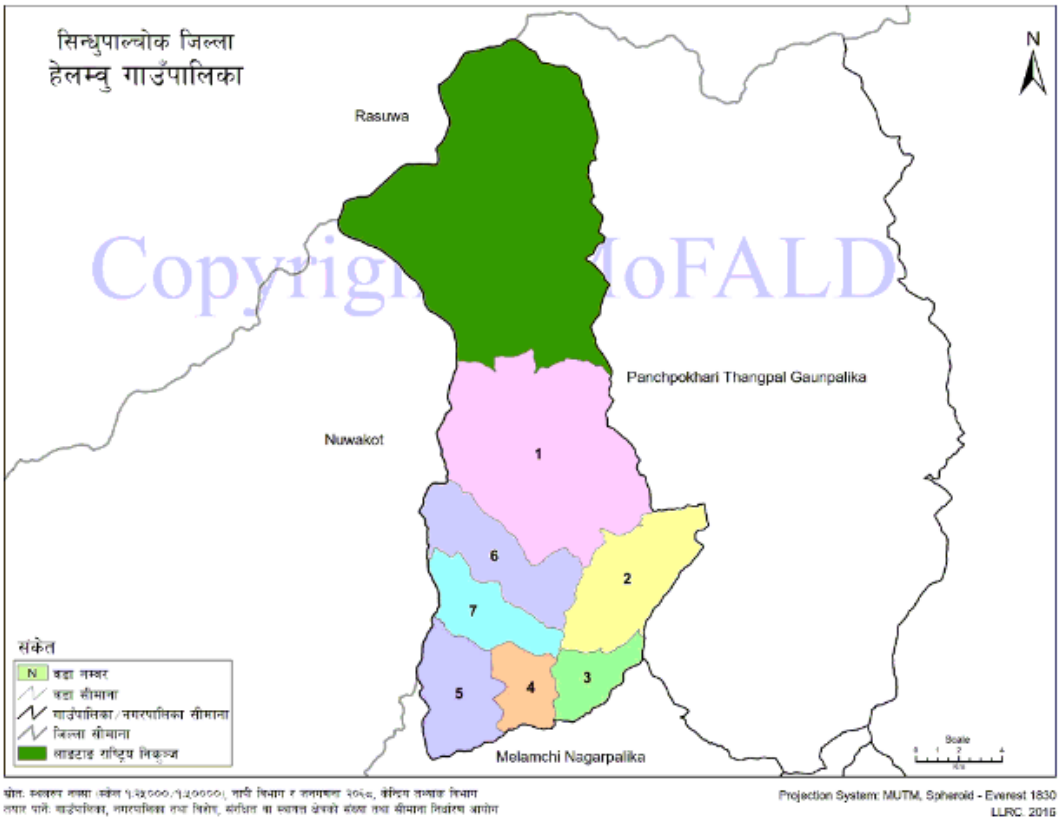


Figure 1: Geographical Area.

Inclusion criteria

- 18 to 60 years of participants
- Willing to give informed consent
- Residence of Helmbu municipality

Exclusion criteria

- Mentally disordered
- Those who are not willing to participate

Ethical consideration: Ethical approval was obtained from the institutional review committee of Central institute of Science and Technology (IRC-CiST) with reference number **IRC/116/078/079** and permission was taken from Helambu Rural Municipality, sindhupalchowk with reference number **93/078/079**. Nepal prior to data collection. Participants were informed about all the aspects of the study before data collection. Written/Verbal informed consent was obtained from the participants after detail explanation of research purpose and assurance of maintaining privacy and confidentiality.

Data Collection

Tools and technique of data collection: Face to face interview was used for collecting of data, semi-structured questionnaire was used as the data collection tools in the study. The questionnaire was divided into four parts.

Part I: Demographic variables

Part II: Questions related knowledge of self-medication

Part III: Questions related to practice self- medication

Part IV: Questions related towards attitude of self –medication practice

Data collection procedure

A semi-structured questionnaire was employed to gather the necessary information. Participants were enrolled as per the inclusion criteria. Before collection of data informed consent was taken from the selected participants. Face to Face interview was be used for collection of data. Sample was selected from each of the seven wards, once the resource and time constraints on the part of the data collection teams were taken into consideration. The required home from each ward was taken through purposive sampling method (which met the inclusion criteria) by the researcher from the ward office. Considering ward office as a center, the required homes from each direction (north, south, west, and east) was taken from the same ward. Additionally, from the selected home the participants were selected by lottery method.

Data recording and Analysis: Printed questionnaires were used for data collection. Microsoft excel was used for data storage and entry. Coding and organizing was done and supervisor consulted with all raw data before data entry.

Data entered into Microsoft Excel-data was analyzed using SPSS (Statistical Package for the Social Sciences) version 20 for statistical analysis. Descriptive statistics mean percentage and frequency were calculated. Association between socio-demographic characteristics and self-medication practice was calculated by using Chi-square test. Data were presented in table, pie and histogram.

RESULTS AND DISCUSSION

This study evaluated the practice of self-medication and its associated factors among households in Nepal for three months among 366 participants. All the data obtained was

analyzed and interpreted on the basis of research objectives using various statistical methods and presented in tables.

Socio-demographic characteristic of participants (n=366)

Figure 2: Age of Participants

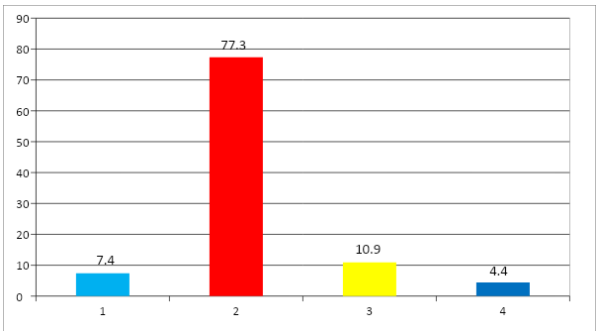
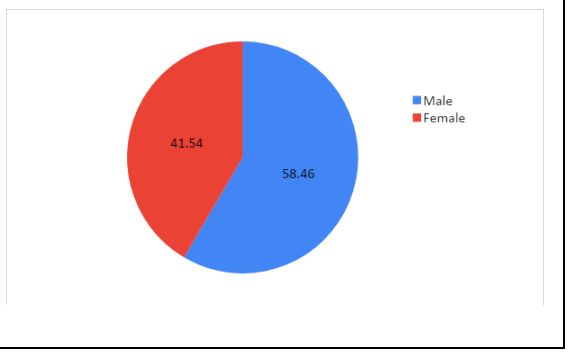


Figure 3: Based on Gender



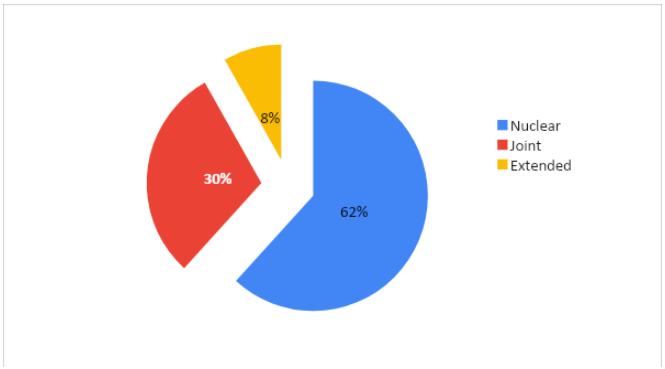


Figure 4: Type of Family.

In this study, majority of the participants were with secondary level of education (44.26%), engaged in service (29.50%) and business holders (29.20%), and belonged to nuclear family (61.70%), Hindus (56.01%) and Janajati (58.46%). A similar study from ***Kolladiba by Abrha et al., (2014)*** showed participants with the level of secondary education (35.4%) to practice self-medication more than their counterparts from their respective categories. This indicates the level of education is low due to socioeconomic status and lack of proper education facilities in Nepal (***Nepal Demographic and Health Survey, 2016***). Participants with a lower level of education, compared with those with a high level of education, were significantly less likely to read the instructions. Service person and Business holders visiting community pharmacy for self-mediation is probably related to their lack of time available to visit the doctor. This is contrary to a study from Ethiopia in which Christian (59.3%), participants with higher education (33.6%), and private employees (38.2%) were found to practice self-medication more (***Shafie et al., 2018***).

Prevalence of Self Medication

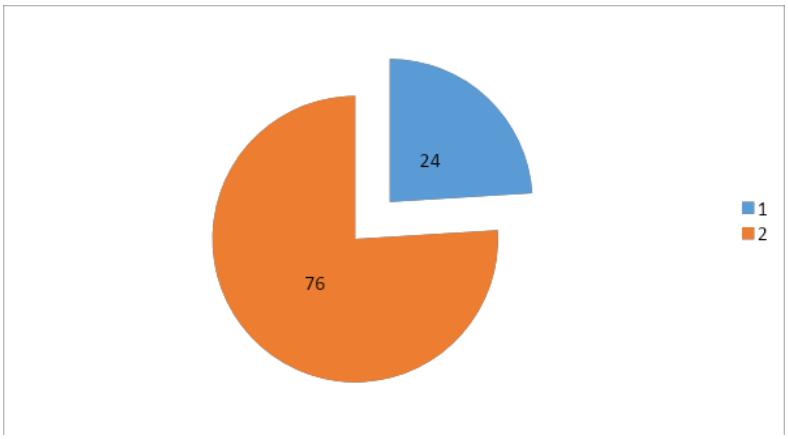


Figure: 5: Prevalence of Self Medication.

As per the findings of this study, 76% of the study participants had practiced self-medication. This is greater than that obtained in a study conducted by ***Shokrzadeh et al., (2019)*** in Iran, where the prevalence of self-medication was 67.9% (***Shafie et al., 2018***). Likewise, the prevalence of self-medication reported from Ethiopia was 75.5%.This variation might be due to the difference in the study population, differences in socio-demographic characteristics of the study population including academic status, non-availability of medical facilities in some areas, easy availability of drugs, and types of drugs that the study intends to identify.

Sources of information about self-medication (n=366)

Table 1: Sources of information about self-medication. (n=366)

Source of information*	Frequency (n)	Percentage (%)
Previous experience	123	33.61
Books/newspaper	16	4.37
Internet	34	9.29
Family	155	42.35
Friends	17	4.64
Others	21	5.74

*Multiple response

The results for sources of self-medication knowledge suggest that the majority of the participants relied on family members (42.35%) and previous experience of theirs (33.61%) for the information. Others gathered information from internet (9.29%), friends (4.64%), and

books/newspaper (4.37%). This result was consistent to a number of studies from eastern Ethiopia (***Mamo et al., 2018***), east Hong Kong (***You et al., 2011***) and north India (***Ahmad et al., 2012)***, where friends or neighbors, previous prescription and pharmacists were the major source from where the respondents got information about the choice of drug for practicing self-medication.

Knowledge and Practice of Patients Regarding Self Medication

Table 2: Knowledge regarding Self Medication (n= 366)

Question	Response	Frequency(n)	Percentage(%)
Do you know about self-medication?	Yes	306	83.6
	No	60	16.4
Do you think self-medication may harm your health?	Yes	254	69.4
	No	112	30.6
Are all drug safe and effective	Yes	294	80.3
	No	72	19.7
Are you aware that certain medication can interact with food and other medication?	Yes	145	39.6
	No	221	60.4
Self-medication can be done at any time of the day?	Yes	131	35.8
	No	235	64.2
Drugs taken as self-medication can be stored at any temperature	Yes	214	58.5
	No	152	41.5
Can drugs be used after expiry date?	Yes	203	55.5
	No	163	44.5
Do you know which of the following drugs are bought without prescription?	Salbutamol	113	30.9
	Codeine	95	26
	Aspirin	73	19.9
	Prednisolone	46	12.5
	Ephedrine	39	10.7
Do you know about the side effects of medicines?	Yes	180	49.2
	No	186	50.8

Table 2 shows that, of the total, majority (83.6%) of the participants knew about self-medication. Similarly, more than half (69.4%) of the participants were thoughtful that self-medication harms their health. Majority (80.3%) of the participants responded that all drugs are safe and effective. However, more than half (60.4%) of the participants were unaware that certain medication can interact with food and other medication. Only one third (35.8%) of the participants responded that self-medication can be done at any time of the day and rest (64.2%) denied the statement. Likewise, 41.5% of the participants denied that drugs for self-

administration can be stored at any temperature. In the same fashion, 55.5% of the participants responded that drugs after expiry date can also be used. Regarding the knowledge on drugs that can be bought without prescription, 30.9% of the participants replied salbutamol, 26% replied codeine, responded that Salbutamol, 19.9% replied aspirin, 12.5% replied prednisolone, and 10.7% replied ephedrine. Furthermore, 50.8% of the participants responded on not knowing about adverse drug reaction whereas 49.2% were known about it.

Table 3: Practice of Participants regarding self medication.

Questions	Response	Frequency(n)	Percent (%)
Have you ever taken medication without prescription for relief of your symptoms?	Yes	278	76.0
	No	78	24.0
If yes, what was/were the type of medication?	Ayurvedic	42	11.5
	Allopathic	306	83.6
	Herbal	10	2.7
	Indigenous	8	2.2
In all types of illness, do you prefer self-medication?	Yes	32	8.7
	No	334	91.3
For what purpose do you usually take medication?	Common cold	5	1.4
	Fever	8	2.2
	Headache	1	0.3
	Tonsillitis	6	1.6
	Gastritis	46	12.5
	All above symptoms	300	81.9
Groups of medication *	Analgesic	15	4.1
	Anti –cold medicine	5	1.4
	Antacids/PPI	46	12.5
	Analgesic , antacids/PPI, and anti -cold medicine	300	81.9
Routes of medication	Oral	366	100

Table 3 shows the practice of participants regarding self-medication. Of the total, more than three-fourth (76%) of the participants responded that they had taken medications without prescription for the purpose of symptom relief. Majority (83.6%) of the participants were aware about self-medication. In this study common cold, fever, headache, tonsillitis, and gastritis were the common (81.9%) type of illness where participants prefer self-medication. Similar to this study finding, a systematic review conducted in Ethiopia reported fever/headache, gastrointestinal tract diseases, and respiratory diseases as the commonest illnesses for which self-medication was taken (***Ayalew MB, 2017***). This finding is also

consistent with studies done elsewhere (***Mamo et al., 2018, Shafie et al., 2018, Baye AM and Sada O, 2018***). The most commonly employed drugs for self-medication in this study were Analgesic, antacid/PPI, and anti-cold medicine. Similar drug/drug classes with different magnitude were mentioned in studies conducted in other part of the world. In the Western Nepal study, paracetamol, NSAIDs, cold remedies, antacids were the most commonly employed drugs for self-medication (***Shankar et al., 2002***). A study conducted among the students of Mekelle University pointed out paracetamol, NSAIDs, antibiotics, cough syrup, and antacids, the most commonly used drugs for self-medication (***Gutema et al., 2011).***

Table 4: Practice of Participants Regarding Self Medication (n= 366)

Questions	Response	Frequency(n)	Percent (%)
Was/ were your symptoms improved with the above medication?	Yes	322	88
	No	44	12
How often do you take medication in the above mentioned way?	Once a week	65	17.9
	Once in two weeks	76	20.8
	Once a month	225	61.3
Reason for self-medication practice?	Habits	154	42.1
	Unavailability of doctors when required	99	27
	Difficult in visiting to doctors	75	20.5
	Financial issues	14	3.8
	Lack of time to visit doctors	24	6.7
Who/ What influenced you to take medicine without meeting a doctor?	Self	191	52.2
	Family member	139	38.0
	Mass media	7	1.9
	Internet	14	3.8
	Others	15	4.1
Are you aware that you are taking the above medication?	Yes	293	80.1
	No	73	19.9
Do you take drugs for self-medication for a long period without medical advice?	Yes	49	13.4
	No	317	86.6

Table 4 shows that, the majority (88%) of the participants responded that their symptoms were improved with the drugs they practiced self-medication while in 12%, symptoms were

not improved. Of the total, more than half (61.3%) of the participants were found to self-medicate once a month and 17.9% self-medicate once a week. Regarding the reasons for self-medication, habit of one to self-medicate (42.1%) was the prime one while 3.8% practiced self-medication because of financial stress. Of the total, half (52.2%) of the participants were self-influenced to take medicines without doctor visit followed by family members (38.0%) and only 1.9% were influenced from the mass media. Majority (80.1%) were aware of what medicines they were taking. Furthermore, 13.4% of the participants responded that they take medications on self for long term without any medical advice while 86.6% didn't practiced that.

Table 5: Attitude of Participants Regarding Self- Medication Practice (n=366)

Questions	Strongly agree n(%)*	Agree n(%)	Disagree n(%)	Strongly Disagree n(%)
Self-medication is not safe in all age groups.	166(45.4)	171(46.7)	18(4.9)	11(3.0)
Self-medication is not advisable for prolonged period of time.	149(40.7)	169(46.2)	20(5.5)	28(7.7)
Self-medication drugs have a tendency to interact with drugs and food.	100(27.3)	239(65.3)	18(4.9)	9(2.5)
Self-medication is completely free of ADR	22(6.0)	75(20.5)	192(52.5)	77(21.0)
There is no need to see a doctor for simple disease.	58(15.8)	209(57.1)	77(21.0)	22(6.0)
People must have right to buy medicines as they wish.	32(8.7)	59(16.1)	199(54.5)	76(20.8)
Some of the drugs which are preferred as self-medication are not safe in pregnancy.	201(54.9)	108(29.5)	29(7.9)	28(7.7)
Pharmacist should have a right to issue medicines without prescription	25(6.8)	96(26.2)	166(45.4)	79(21.6)
It is okay to treat minor illness like common cold, fever, pain etc with self-medication.	110(30.1)	228(62.3)	25(6.8)	2(0.5)

Frequency(n), Percentage(%)

Table 5 shows the attitude of participants regarding self-medication practice. Near about half (46.7%) of the participants agreed that self-medication is not safe in all age group, 45.4% strongly agreed 4.9% disagreed and 3.0% strongly disagreed. Similarly, 46.2% agreed that

self-medication is not advisable for prolonged period of time and 5.5 % disagreed. Likewise, 665.3% agreed on the statement "*self-medication drugs have a tendency to interact with drugs and food*", while 2.5% strongly disagreed. In the same manner, only 20.5% of the participants agreed that self-medication is completely free of ADR. However, more than half (52.5%) showed disagreement to the statement. Also, 57.1% participants agreed they should not see a doctor for simple disease while 21% disagreed. "*People must have right to buy medicines as they wish*", 16.1% agreed while 54.5% disagreed on this statement. More than half (54.9%) of the participants strongly agreed that some of the drugs preferred for self-medication are not safer in pregnancy, while 7.7% strongly disagreed with the statement. Moreover, 26.2% of the participants agreed that pharmacist should have a right to issue medicines without prescription, while 45.4% disagreed to that. Furthermore, 62.3%, 30.1% of the participants agreed and strongly agreed that it is okay to treat minor illness like common cold, fever, pain etc. with self-medication, while 6.8% and 0.5% disagreed and strongly disagreed.

Level of knowledge and Attitude of the participants

Table 6: Level of knowledge and Attitude of the participants (n= 366).

Variable	Category	Frequency (n)	Percentage (%)
Level of Knowledge	Poor	113	30.87
	Average	250	68.32
	Good	3	0.81
Level of attitude	Poor	17	4.64
	Average	324	88.53
	Good	25	6.83

Table 6 shows the average level of knowledge and attitude in most of the participants i.e. 68.32% and 88.53%, respectively.

Factor associated with Self- Medication practice of participant

Table 7: Factor associated with Self- Medication practice of participant (n= 366).

Variables	Self-medication practice		χ^2	p-value
	Yes No. (%)	No No. (%)		
Age in years				
< 40	210	90	0.799	0.001*
>40	40	16		
Sex				
Male	182	28	0.723	0.054
Female	32	124		
Occupation				
Employed	299	60	1.25	0.001*
Unemployed	7	0		
Education				
Literate	235	31	0.025	0.04*
No Education	32	28		

Table 7 shows that the age, occupation and education of the participants are significantly associated with self-medication practice of participants (p-value<0.05). Age (> 40,and< 40), occupation (employed, and unemployed), and education level (Literate, and No education) were categories into a binary variable.

The study illustrated the significant association between age, occupation and education of participants with self-medication practice. This is similar to other studies from Saudi Arabia (***Allam and Amer, 2020***) and Iran (***Shokrzadeh et al., 2019***), where age, occupation and education level were found significantly associated with self-medication (p<0.05). The current study showed that the self-medication is more frequent among younger people (<40 years) and is similar to that of a study conducted in Spain (***Rubio and Quevedo, 2010***). A possible explanation could be that younger people can cope with their ailments without physician consultation, given that most common medicines are available without a prescription, whereas older people are more frequently under treatment with prescribed medicines due to chronic conditions. The higher rate of self-medication in younger people could possibly be related to a perceived lack of time for a doctor's consultation and/or a loss of reliance on the health system, together with better education and more facilities to obtain

information ***(Niclos et al., 2018***). This finding of this current study is different from those of a German study which found that self-medication increased with age (Knopf and Grams, 2013). In this study employed participants were seen more to practice self-medication than unemployed participants. Of the type service(29.50%), business holder (29.20%) and those involved in agriculture (25.40%) were the main. a study by ***Selvaraj et al., (2014***) also reported higher self-medication practice among teachers, businessmen, and artist It might be because of their busy schedule. Likewise, there was a significant association between level of education and self-medication ($p<0.01$). Practice of self-medication was high among literate participants (232) and especially in participants with secondary level of education (44.26%). This finding is way similar to other studies conducted at Rajasthan (***Jain et al., 2015***) and India (***Kumar et al., 2015***), where the highest prevalence of self-medication was among literate respondents. Based on previous studies, illiteracy and low level of education among people presented a challenge especially in reading and understanding the content of drug guide and prescription as sources of drug information, thus potentially contributing to inappropriate use of medications (***Ocan et al., 2014***).

CONCLUSION AND RECOMMENDATION

The prevalence of self-medication among households at the study site was high. Self-medication was higher in people with less education or in people, who were male, Janajati, Hindus, service holders and businessman, and who belonged to nuclear family. The common reason for self-medication practice were self-habit, unavailability of doctors as required, difficult in travelling to visit doctors, financial issues and lack of time to visit doctors. The most typical sources of drug information for self-medication were family members, previous experience, internet, friends and books/newspaper. Common cold, fever, headache, tonsillitis, and gastritis were the main ailments of the participants that choose for self-medication and their respective frequently used drugs were them analgesic, antacid/PPI, and anti -cold medicine. Lastly, age, occupation and education were the factors significantly associated with self-medication practice.

Although appropriate self-medication practice is one of the components of self-care adopted by the WHO, its irrational use might bring serious health consequences. Hence, based on the findings of this study, we recommend,

Allocation of some resources by drug regulatory and health authorities

- To provide health information on self-medication, type of drugs, their roper time, their positive and negative effects.
- Enforce rules determining drug prescription and dispensing.
- Increase awareness among community people on antimicrobial drug resistance and its health impacts.
- To conduct future research focused on interventions to create awareness about self-medication and other research to be performed in various seasons and for longer periods
- Active participation of pharmacists to neutralize the negative effects of self-medication practice and educate people looking for self-medication.
- Effective collaboration bet ween patients, pharmacists and physicians that can affect responsible self-medication.
- Development and implementation of health policies to prevent the OTC sale of prescription medications.

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