

# Exploration of self-medication practice in Pokhara valley of Nepal

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## Research article

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# Abstract

**Background** Self-medication (SM) is the practice of consuming medication without the consultation of physician. The drugs most commonly self-medicated are paracetamol, analgesics, ranitidine, oral rehydration solution, antibiotics, etc. The objective of the study is to assess the SM status and its causes in Pokhara valley of Nepal.

**Method** The study was conducted among the people residing in Pokhara metropolitan city. The study duration was of four months from April to June, 2018. The study population were patients attending health camps at four different areas. Structured questionnaire was used to collect demographics of the patients and the details of the usage of self-medication.

**Result** Out of 200 patients, 38.2% patients were found to be self-medicating. The most common illness sought for SM was ache (headache, body ache) in 50% followed by cough and cold in 31% and gastritis in 23%. Paracetamol was the drug consumed by 16 subjects followed by cough syrup (n=14) and nimesulide (n=11). Lack of knowledge about the disadvantages of SM led to self-medication in 65% of respondents. The paramedics most commonly consulted for medication were pharmacists (60%).

**Conclusion** The trend of SM is high in Pokhara valley. It's high time the regulatory agencies should solve the problems. The federal government should formulate strict guidelines for appropriate use of the medications.

## Background

The WHO has defined SM as “the use of drugs to treat self-identified symptoms or use of prescribed drug continuously or intermittently for chronic or recurrent diseases without periodic consultation with health care provider.”<sup>1</sup> The practice of SM is high in Nepal. Most of the government hospitals, relied upon by 3/4<sup>th</sup> of the country's population, are not well equipped and unable to fully deliver services to the public. This is contributing highly to the practice of SM by consuming medications with consultation of paramedics.<sup>2,3</sup> Due to the increment in the literacy rate, people are being aware about the medications; more about over the counter medication. The development of information technology has made people easy access to the internet and smartphones. People can google about their health issues and the medications.<sup>3</sup>

In the Pokhara valley of Nepal, the practice of SM was huge as shown by previous studies.<sup>4,5</sup> People were self-medicating mainly with non-steroidal anti-inflammatory drugs

(NSAIDs). They were consuming these drugs for body ache and headache. The consumption of ranitidine, omeprazole, pantoprazole for gastritis was also large. Consumption of such medications was attributed to self-knowledge, suggestion of relatives and consultation with local pharmacists.

In a Nigerian study 85% respondents admitted to practice SM and the most common used drugs were analgesics.<sup>6</sup> The practice of SM is overcoming the financial burden in healthcare like reduction of consultation fees, transportation cost, etc. On the other hand, it is creating problems like antibiotic resistance, adverse drug reactions and drug interactions. There is a need of strict guidelines regulating patients as well as pharmacists to ensure optimum utilization of SM practice.<sup>7</sup>

This study reveals current status of SM among the study population. In the current Federal system of country many things are changing.<sup>8</sup> This study will be an important tool for local government to formulate plan of action for the appropriate use of medicines. This study will also be instrumental to the federal government and regulatory agencies to formulate strict rules regarding the use of over the counter and prescription drugs.

## Methods

**Aim:** This study aims to explore and assess the status of SM and its causes in Pokhara valley of Nepal.

### Characteristics of participants

There were regular health camps of Bibeksheel Nepali social club in Pokhara valley. The data were collected from four such health and dental camps in four wards of Pokhara valley; Baidam, Birauta, Hemja and Pame. All the consenting participants attending the health camps and meeting the inclusion criteria were included. A total of 200 respondents were enrolled. Patients older than 18 years who are able to provide consent were included in the study. Mentally retarded or differently able persons with their caretaker or they themselves if able to communicate were included in the study after seeking informed consent.

## Description of methods

Structured questionnaire was used to take the data on the particulars of the patient; type of medication consumed among the various groups; duration of consumption of drug, disease/s for which drug/s is/are consumed; person to whom the advice was taken for SM for eg self-knowledge or friends or pharmacist and the reasons for not consulting the consultant doctor like lack of knowledge etc.

The data were entered in Microsoft Excel and statistical analyses done with Statistical Package for Social Sciences (SPSS) 24.0 version. Chi square test was done to compare between different groups. The level of significance was set at 95% of confidence interval (CI) and p value  $<0.05$  was considered significant. The ethical approval was obtained from the institutional review committee(IRC) of Gandaki Medical College (GMC).

## Result

Among a total of 200 study population, males and females were 44.8% and 55.2 % respectively. The age and sex distribution of the study population is presented in table 1.

Table 1: Age range and sex distribution of the study participants

Age Range (Years)	Sex		Total (percent)
	Female	Male	
<19	1	9	10 (4.97)
20-29	16	21	37 (18.41)
30-39	22	21	43 (21.39)
40-49	18	23	41 (20.40)
50-59	18	15	33 (16.42)
>60	15	22	37 (18.41)
Total (Percent)	90 (44.78)	111 (55.22)	201 (100.00)

A total of 38.2% were self-medicating in the past six months. The age range of subjects with the highest practice of SM was in 30-39 with the significant P-value as depicted in table 2.

Table 2: Relation of age range with practice of SM.

Age Range (Years)	Have you taken self-medication without doctors' advice in the last six months?		Total (%)	P value
	No	Yes		
<19	6	4	10 (4.97)	0.044*
20-29	19	18	37 (18.41)	
30-39	30	13	43 (21.39)	
40-49	31	10	41 (20.40)	
50-59	14	19	33 (16.42)	
>60	23	14	37 (18.41)	
Total(Percent)	123 (61.19)	78 (38.81)	201 (100.00)	

There was no significance of SM practice with the education level (p value: 0.068) which is illustrated in table 3.

Table 3: Relation of range of education with practice of SM

Range of education	Have you taken self-medication without doctors' advice in the last six months?		Total	P value
	No	Yes		
Intermediate and below	106	60	166	0.068
Bachelors and above	17	18	35	
Total	123	78	201	

The most common drug consumed was paracetamol (n=16) followed by cough syrup (n=14) and nimesulide (n=11). The distribution is shown in table 4.

Table 4: The drugs taken as SM (n=29)

Drugs (if known) used by the respondents	Number
Paracetamol	16
Cough syrup	14
Nimesulide	11
Ibuprofen	6
Ayurvedic oil	6
Ibuprofen+Paracetamol	2
Pantoprazole	2
Ranitidine	2
Cefixime	1
Amoxicillin	1
Azithromycin	1
Topical steroid ointment	1

*\*Multiple responses was allowed and thus percentage not calculated.*

The most common illness sought for SM was ache (headache, bodyache) in 50% followed by cough and cold (31%) and gastritis (23%) as depicted in table 5.

Table 5: Diseases for which SM were sought (n=78)

Disease	Frequency of usage	Percent
Ache	39	50.0
Cough and cold	24	30.8
Gastritis	18	23.1
Infection	6	7.7
Hypertension	1	1.3
Others	10	12.8

The pharmacists (60%) were the paramedics most commonly consulted for medication. They were consulted by 60% subjects. It was followed by self-knowledge in 22% of subjects as illustrated in table 6.

Table 6: Source of advice (n=78)

By whose advise you had taken the medicine?	Number	Percent
Pharmacists	47	60.3
Self	17	21.8
Health care workers	7	9.0
Others	12	15.4

*\*Multiple response was accepted*

The lack of knowledge about the disadvantages of SM led to its practice in 65% of respondents as illustrated in table 7.

Table 7: Reason of not consultation to physician

What was the reason of not taking consultation with doctors?	Number	Percent
Lack of knowledge	50	64.1
Financial constraints	7	9.0
Pressure from the family	6	7.7
Others	13	16.7

*\*Multiple response was accepted*

## Discussion

The country needs to formulate strict guidelines regarding the drug sales and consumption. The law should strictly monitor adherence to the practices of over the counter and prescription medicine. The department of drug administration in Nepal is the authorized body to deal with the drug management systems of the country.<sup>9</sup> It has to regulate the drug distribution system strictly.

The over the counter drugs were often sold rampantly by untrained distributors and antibiotics also often prescribed without any prescription.<sup>10</sup> The NSAIDs like paracetamol, nimesulide were commonly self-medicated due to ease of availability and the knowledge regarding their use. In many studies, NSAIDs including paracetamol were the most extensively consumed medication;<sup>4-6, 11-13</sup> the fact similar to our study. Whereas in a study in Khartoum state of Sudan, analgesics including paracetamol second to antibiotics in terms of consumption.<sup>14</sup> In Ebonyi state of Nigeria, multivitamins and anti-malarial drugs are on top, leaving behind analgesics and antibiotics.<sup>15</sup>



The antibiotics like cefixime, amoxicillin and azithromycin were self-medicated in a case each. Lack of knowledge about proper use of antibiotics is leading to antibiotic resistance.<sup>5,10,16</sup> Latter has been an alarming problem in the Nepal. WHO has been working in it with strategic plans.<sup>17</sup> The most common diseases include aches and gastritis which corresponds to many other studies done in other part of world.<sup>4,5,18</sup> Body ache and headache were the most common presentation of many diseases like influenza, cold, musculoskeletal problems, dysmenorrhea, migraine, etc.<sup>19</sup> The reason of SM of anti-gastritis medication after analgesics was extensive prevalence of gastritis in Nepal.<sup>20</sup> The medication for gastritis is easily available in pharmacies. In contrast to our study, in many other studies, the most common illness seeking for SM was fever.<sup>4,5,11,12.</sup>

The pharmacists were most often consulted for medicine. Reason is their easy availability in pharmacy. In many other studies too, pharmacists were most often consulted for healthcare.<sup>4,11,13,21</sup> Due to the inaccessibility to specialized care and consultants, pharmacists were sought for treatment of many illnesses. Shops of pharmacists are easily available next door. In rural areas they were the first person to provide medications in most instances.

Prevalence of SM in our study was 38.2% comparable as that of other studies.<sup>22,23</sup> The high prevalence could be attributed to the easy availability of the drugs over the counter. People can google about their health problems due to development of information technology too<sup>3</sup>. They visit physicians and consultants as last resort. In contrast to our study which was done in urban population, the practice of SM in urban populations of Ebonyi state of Nigeria,<sup>15</sup> was higher and urban Puducherry lower.<sup>11</sup> This could be explained on the basis of different regions, health policy and determinants of health.

In contrast to other studies which project the cause of SM practice to be due to the lack of the knowledge,<sup>11,12</sup> the education level was not significantly related to lack of knowledge in our study. As our study was done in the urban area, most of the respondents were literate.

The recall period of six months in our research corresponds to many other similar researches<sup>4,12</sup> but in Jammu<sup>13</sup> one-year recall period was considered. We chose six months so that there won't be any recall bias.

In our study, lack of knowledge about consultation to the physician was the major reason in 65% of subjects. Though education level wasn't significantly related to SM practice, people expressed their lack of knowledge as the main factor. They weren't aware about consultation to the general physicians denying fact that symptom could be more serious. Whereas in Nigerian and Srilankan studies, consideration of disease as minor was the main reason.<sup>6,12</sup>

### Conclusion:

The practice of SM was high in Pokhara valley of Nepal. Paracetamol was the most extensively self-medicated drug. Headache and body ache were the most common condition seeker for SM. The pharmacists were consulted most often for SM due to lack of knowledge about the adverse events. Central as well as federal government needs to work a lot towards it to minimize the adverse consequences. It should formulate strict guidelines for the appropriate use of the medications. Drug regulatory agencies should work hand in hand with the experts in the related field to overcome the problem of misutilization of drugs.

## Abbreviations

GMC: Gandaki Medical College

IRC: Institutional Review Committee

NSAIDs: Non-steroidal anti-inflammatory drugs

SM: Self medication

SPSS: Statistical Package for Social Sciences

WHO: World Health Organization

## Declarations

Ethics approval and consent to participate: The ethical approval had been obtained from Gandaki Medical College-Institutional Review Committee. All participants were 18 years and older who can give consent according to law of Nepal. Written informed consent was taken from all the subjects. In case of mentally retarded subject, consent was obtained from parent/legal guardian.

Consent for publication: Not applicable

Availability of data and material: The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Competing interests: The authors declare that they have no competing interests.

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Authors' contributions: BA developed the proposal, analyzed and interpreted the patient data. SP was a major contributor in conducting study, interpreting the data and writing the manuscript. All authors read and approved the final manuscript.

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