

Effect of Educational Intervention on the Knowledge and Attitude Towards Self Medication Amongst Patients on Hemodialysis at the Buea Regional Hospital

Lum Christabel¹, Palle John Ngunde¹, Esoh Nahyeni Bassah¹, Dili Koumai Ismael¹, Njume Neville Kome¹,

¹(Department of Nursing, Faculty of Health Sciences, University of Buea, BP63 Buea, Cameroon)
Corresponding author: Lum Christabel

ABSTRACT: Self-medication is the use of medications without prior medical consultation on indication, dosage, or duration of treatment. Even though self-medication is a useful tool to treat minor ailments, improper self-medication practice may lead to adverse drug reactions and inappropriate selection of medications. The aim of this study was to assess the effect of an educational intervention on the knowledge and attitude of self-medication among patients on dialysis at the BRH. The study was a hospital based interventional study conducted at the BRH hemodialysis unit with a sample size of 80 participants that were purposively selected. An adapted questionnaire was used to collect data and later the intervention was implemented in 2 different sessions lasting for 15 minutes each session. At the end of the intervention, the same questionnaire was administered to participants to evaluate if there was any change in knowledge and attitude. Data analyzed in SPSS v. 26. The finding of this study revealed that the prevalence of self-medication was low (20%). However, it was prevalent in all the participants who reported to have been sick. For factors associated with self-medication, the results findings show that saving money had a significant p value of 0.002. The participants had a mean score of 0.299 for knowledge before and 4.254 after intervention which gave a highly significant p value of <0.001 and mean score of 3.492 for attitude before intervention and 5.462 after intervention also yielding a highly significant p value of <0.001. The prevalence of self-medication among patients on hemodialysis was low with a rate of 20% with the most common associated factor being to save money. However, this research proves that education has an effect on the knowledge and attitude of patients on hemodialysis with a highly significant p value of <0.001.

Keywords: Self-medication, Educational intervention, Hemodialysis, Knowledge, Attitude.

I. INTRODUCTION

Throughout human history the dominant paradigm of healthcare was individual self-care in the family and local community [1]. Treatment involved self-treatment with locally-produced preparations of generally uncertain efficacy. People themselves were responsible for their own health, and that of their families, as self-sufficiency was obligatory and almost universal. The opportunities and needs for improvement were great [1].

Self-medication is the use of medications without prior medical consultation on indication, dosage, or duration of treatment [2]. Proper use of self-medication can benefit the individual's health and is recognized by the WHO as part of self-care. It can help treat minor ailments that do not require medical consultation [2-4]. Nowadays, drug resistance is becoming a worldwide problem, mainly in developing countries as a result of the use of antibiotics without prescription. In many developing countries, antibiotics and potentially lifesaving medicines are easily available, and every pharmacy sells without prescription [5].

Chronic kidney disease (CKD) is epidemic worldwide with an important and representative social and economic burden for the population in the context of public health [6]. Systemic arterial hypertension (SAH) and diabetes mellitus (DM) stand out as the main primary causes of CKD 34% and 31%, respectively [7]. Knowledge of the epidemiological and clinical aspects of dialysis patients can assist managers in planning safe care and promoting quality of life with reduced morbidity and mortality [6].

It should be noted that patients with end stage renal disease (ESRD) have higher mortality and morbidity rates compared with the general population [7], with an annual mortality rate of 19.9% in Brazil in

2017[2]. These patients usually need a high number of medications due to aging, dialysis and its characteristics related to their chronic inflammatory state, hyperparathyroidism, self-medication, anemia, malnutrition, and presence of multiple comorbidities, such as diabetes, dyslipidemia and arterial hypertension [6]. In addition, there is a greater probability of occurrence of adverse events in these patients; therefore, the real need for using several medications should be reviewed [7].

Numerous studies have been conducted in different countries investigating self-medication practices among university students, health practitioners, community participants etc. In sub-Saharan Africa, the existing data mainly concern the overall self-medication rate, which varies from 11.9% to 75.7% [8]. High self-medication prevalence was reported among university students in Bangladesh (88%) [8], Jordan (86.7%) [9], Saudi Arabia (86%) [10], and Egypt (52.7%) [11]. Various studies have shown that women are particularly interested in self-medication, being unaware of its consequences [11]. Participants from different occupations had used various classes of drugs through self-initiative. Analgesics were most commonly used (84.39%) [12]. According to previous studies, the most common reason reported for self-medication was previous experience, to save money and time, minor illness, seeking quick relief, suggestions from relatives/friends, personal convenience, ease of drug acquisition, unsatisfied with service given and impoliteness of health-care practitioners [12]. Similarly, the most common medical conditions that led people to self-medicate were cough and headache, followed by cold and fever. Other medical conditions mentioned by different studies have been sore throat, running nose, eye problems, diarrhea, malaria, gastrointestinal disorders, infection, skin problems, and dysmenorrhea [13]. Antibiotics, analgesics, antipyretics, antacids, vitamins, cough remedies, eye drops, antihistamines, antimicrobials, and anti-inflammatory drugs are commonly used classes in self-medication [13].

Since existing literatures on studies show a high prevalence of self-medication, there is need to educate the population to understand the risk involved and strategies they can use to avoid self-medicating with prescription drugs. This study therefore sought to assess the effect of education on the knowledge and attitude of self-medication practice among patients with ESRD on hemodialysis at the Buea Regional Hospital.

II. MATERIALS AND METHODS

This quasi experimental interventional study was conducted from February to June 2022 among patients on dialysis at the Buea Regional Hospital.

The Buea regional hospital is found in the Fako division of the South West Region of Cameroon on the foot of Mount Cameroon; Situated precisely between the delegation of Education and the army camp along the high way to the Bokwango neighborhood. The hospital is made up of various departments and units such as the medical unit, the surgical unit, the pediatric unit the maternity, the HIV/AIDS unit, the Laboratory unit, the x-ray unit, the hemodialysis center, the tuberculosis center, the Diabetes Center, the theater department and the outpatient department (OPD). Each of the units and departments is headed by a specialist doctor (surgeons, Gynecologist, Nephrologists, neurologist etc). Wards are controlled by senior nurses and midwives of different categories and qualifications ranging from state registered nurses to nurses with Master Degrees, Bachelor degrees, HNDs etc. The hospital attends to patients from all over the national territory.

The Hemodialysis Center was created in 2011 and inaugurated by the minister of health on the 12th of September. It operates daily except on Sundays. Dialysis at the center usually starts at 5am daily and nurses work three to four sessions attending to patients from all over the nation. The center has 15 staff (two Doctors, ten nurses, one technician and two cleaners) number of personals and is led by a nephrologist.

To carry out the study, an ethical clearance was obtained from the Institutional Review Board of the Faculty of Health Sciences, University of Buea. Then administrative approval was obtained from the Faculty of Health Sciences, University of Buea, the regional delegation of public health (No. 426/431), and from the director of the Buea Regional Hospital.

Patients with End Stage Renal Disease attending the Buea Regional Hospital hemodialysis unit made up the study population, and it included patients with kidney disease on dialysis at the Buea Regional Hospital, participants who signed the consent form and those who were present and conscious during the time of study. The exclusion criteria considered patients at terminal stage too sick to participate in the study and patients who were temporarily on dialysis. A purposive sampling technique was used to select participants. Given that the Buea Regional Hospital is the only hospital with a dialysis center in South West it was convenient for this study. A structured questionnaire was used to collect data. The educational intervention comprised of a 15 minutes face-

to-face meeting with the patient in two separate occasions. The content of the educational intervention covered definition and effects of self-medication. Questionnaires were administered before and after the educational intervention for assessment of the effect on knowledge and attitude.

Data collected was checked for completeness and entered into SPSS version 23 for further analysis. Descriptive statistical analyses, such as frequencies and percentages, were computed and presented using tables. The analyzed data from the charts and tables was used to draw up conclusions. A paired two samples test for mean was used to compare the mean before and after intervention.

III. RESULTS

III.1. Description of Sociodemographic Characteristics

In this study, the age group 50-59 has the highest frequency of occurrence 22 (31.4%). Married people have the highest frequency of occurrence 49 (70.0%). Most of the participants had the secondary and high school level of education 23 (32.9%) and business was the most frequent profession too with 35 (50.0%) of the participants (TABLE 1).

III.2. Proportion of self-medication

In this study, 56 (80%) of the participants said they had no disease in the past 3 months while 14 (20%) said they had (TABLE 2). And 56 (80%) of the participants said they had not self-medicated in the past 3 months while 14 (20%) admitted to have taken medication (TABLE 3). The marital status (p value 0.036) and educational levels (p value 0.0407) have a significant p-value as regards the proportion of self-medication (TABLE 4).

III.2.1. Self-medicated disease conditions

Cough was the highest medicated disease condition (25%) while fever and diarrhea were the least (8.3%) (Fig. 1).

III.2.2. Awareness of self-medication

In this study, 10 (14.3%) of the participants said yes they had heard about self-medication while 60 (85.7%) of the participants said no (TABLE 5).

III.2.3. Factors associated to Self-Medication

The TABLE 6 shows the way participants who had self-medicated and those who had not seen the factors associated with self-medication. To save money 0.021, advice from family member 0.016, medication at home 0.003 and easy access to drug store 0.022 had significant p-values <0.05.

III.2.4. Effects of an educational intervention on knowledge and attitude

The TABLE 7 shows participants' knowledge before intervention. With regards to definition only 16.6% of the 6 participants who attempted had it right while 84.4% had it wrong. All the 6 participants could identify a correct statement about self-medication whereas with regards to its effects, 33.3% said adverse drug reactions, while risk of double medication and over and under dosing had 50% of the respondents.

The TABLE 8 shows participants' knowledge after intervention. With regards to definition only 71.6% of the 67 participants who attempted had it right while 23.3% had it wrong. All the participants could identify one or two correct statements about self-medication whereas with regards to its effects, 94.0% said adverse drug reactions, while risk of double medication and over, risk of dependence and under dosing had the least percentages of 31.3%, 22.3% and 20.9% respectively. The p value after comparing the average mean score for knowledge before and after intervention was 0.001 which is significant as shown on the TABLE 9.

The TABLE 10 illustrates participants' attitude before intervention and a majority 60 (85.7%) of the 70 participants said they will recommend self-treatment to others. 61.4 said self-medication is part of self-care while 100% said they would not want to start therapy without consulting, 85.7% said no to go to the pharmacy when sick, while only 15.7% admitted to needing teaching on self-medication and 75.7% said no to simplifying access to health facilities.

The TABLE 11 shows that only 18 (25.7%) of the participants still maintain that they will recommend self-medication to others while 49 (70%) of the said they will not. 61.4 said self-medication is part of self-care while 100% said they would not want to start therapy without consulting, 94.6% said no to going to the pharmacy when sick, while only 97.4% admitted to needing teaching on self-medication and 92.8% said no to simplifying access to health facilities. The mean score for the attitude was compared for before and after intervention and a significant p value of 0.001 was gotten as seen on the TABLE 12.

IV. DISCUSSIONS

IV.1. Demographic distribution of participants

Of the 70 participants that were recruited in the study, ages 50-59 had the highest occurring frequency 22 (31.4%) while ages 20-29 had the least occurring frequency that is 5 (7.1%). With regards to marital status a majority 49 (70%) of the participants were married while just 7 (10%) of the participants were widows. Most 23 (32.8%) were between high school and secondary school while a minority 9 (12.8%) of the participants were of the university level of education. While most of the participants 35 (50%) were into business before the illness, a few of them were into other occupations while 18 (25.7%) of them were farmers. Also, a larger proportion 67 (95.7%) of the participants said they were Christians while a few 3 (4.2%) of them said they were pagans.

IV.2. Proportion of self-medication among study group

The proportion of self-medication among patients on hemodialysis at the BRH was very low as 14 (20%) out of the 70 participants had self-medicated. This finding is contrary to a study conducted by Michael et al in Cameroon [14] where they had prevalence of 67.8% which could be as a result of the difference in study participants. However, it was noticed that all 14 (20%) participants who admitted to have been sick or ill in the last three months, self-medicated themselves with cough being the most common occurring illness (25%) similar to the findings of Mary et al [13] where she stated in her findings that cough was the most common occurring illness for which her participants self-medicated. This similarity could be due to the fact that cough is not considered as an illness that warrants consultation. While running nose, hypertension, fever, eye infection and diarrhea were the least occurring illnesses (8.3%).

Marital status had a significant p-value of 0.036 as most of the participants who self-medicated were married people and educational level showing that a majority of those who practiced self-medication were of a higher level of education (p-value=0.0407). This is similar to a study conducted by Michael et al [14] in 2011 in Cameroon where marital status and level of education showed higher rates of participants who practiced self-medication.

IV.3. Factors associated with self-medication among study group

With regards to factors associated with self-medication, of the 14 (20%) participants who had self-medicated, 6 admitted that it was for the purpose of saving money while 8 of the participants said it was not whereas for participants who had not self-medicated yet 44 of the participants said it will be as a result of wanting to save money while 12 of them said no. This factor had a significant p-value of 0.021. This finding is similar to those of Jafari et al [15] 2015 45.5% of his participants reported saving money as a factor for self-medicating. This similarity could be due to the fact that the two study settings are developing countries.

For knowledge about the illness a majority (9) of those who had self-medicated said no while a majority (41) of the participants who had not self-medicated said yes. The p-value here was insignificant. This finding is contrary to the findings of Mary et al [13] where knowledge about illness had a significant p-value of 0.02 which could be as a result of the fact that most of the participants in this study focused more on saving money.

A majority 10 of the participants who had self-medicated said it was due to advice from a family member while 36 of the participants who had not self-medicated disagreed. However, this factor also had a significant p-value of 0.016 which are similar to Michael et al. [14] where he also identified advice from family members as an associated factor.

Presence of medication at home and easy access to drug store were also some of the factors supported by a majority 13 and 10 respectively of the participants who had self-medicated with significant p-values of 0.003 and 0.022 respectively which is in line with the findings of Michael et al [14] where presence of medication at home and easy access to drug store were factors associated to self-medication.

IV.4. Effect of an educational intervention on knowledge and attitude of participants.

For the participants' knowledge before intervention, with regards to definition only 16.6% of the 6 participants who attempted had it right while 84.4% had it wrong. All the 6 participants could identify a correct statement about self-medication whereas with regards to its effects, 33.3% said adverse drug reactions, while risk of double medication and over and under dosing had 50% of the respondents. Summarily 97.1 of the total participants had poor knowledge.

The participants' knowledge after intervention, with regards to definition only 71.6% of the 67 participants who attempted had it right while 23.3% had it wrong. All the participants could identify one or two correct statements about self-medication whereas with regards to its effects, 94.0% said adverse drug reactions,

while risk of double medication and over, risk of dependence and under dosing had the least percentages of 31.3% 22.3% and 20.9% respectfully. 10.4% of the participants had excellent knowledge, 28.4% had very good knowledge, 37.3% had average knowledge while only 23.9% had poor knowledge.

The p value after comparing the mean score of 0.299 for knowledge before and 4.254 for knowledge after intervention was <0.001 which is highly significant. This finding is in line with the findings of Carlos et al [16] 2006 where the educational intervention had an effect on knowledge with a highly significant p value of <0.001 in Ecuador after comparing the mean of before and after intervention.

For the participants' attitude before intervention and a majority 60 (85.7%) of the 70 participants said they will recommend self-treatment to others. 61.4 said self-medication is part of self-care while 100% said they would not want to start therapy without consulting, 85.7% said no to go to the pharmacy when sick, while only 15.7% admitted to needing teaching on self-medication and 75.7% said no to simplifying access to health facilities. This gave an average score of 78.6% for average attitude and 11.4% for poor attitude. Only 10% of the participants had an excellent attitude.

The TABLE 10 illustrates participants' attitude before intervention and a majority 60 (85.7%) of the 70 participants said they will recommend self-treatment to others. 61.4 said self-medication is part of self-care while 100% said they would not want to start therapy without consulting, 85.7% said no to go to the pharmacy when sick, while only 15.7% admitted to needing teaching on self-medication and 75.7% said no to simplifying access to health facilities. For the score after intervention, 97.0% of the participants had an excellent attitude while only 3.0 had an average attitude. After comparing the mean score which was 3.492 for before intervention and 5.462 for after intervention and a highly significant p value of <0.001 was gotten. This finding is in line with a study conducted by Sally et al [17] 2019 in Egypt where they also had a highly significant p value of <0.001 after comparing the mean of before and after intervention.

V. CONCLUSION

This study was conducted at the hemodialysis Centre of the Buea Regional Hospital to assess the effect of educational intervention on the knowledge and Attitude towards self-medication amongst patients on hemodialysis. The prevalence of self-medication among patients on hemodialysis was low with a rate of 20% with the most common associated factor being to save money. Saving money, advice from family member, presence of medication at home and easy access to drug store were identified as some factors associated with self-medication. However, this research proves that education has an effect on the knowledge and attitude of patients on hemodialysis with a highly significant p value of <0.001 . Based on this study, recommendations are made to the ministry of public health to look in adopting measures in order to improve the underlying conditions facilitating self-medications. And to hospital heads, to assign staffs with different topics like self-medication to educate patients continually.

VI. ACKNOWLEDGEMENTS

The authors would like to thank all the participants who took part in this study.

Limitations of the study

The calculated sample size was 80 but this study employed 70 participants. After the intervention, 3 participants could not take part in the study due to change in prognosis. This study used a 3 months' recall period which could be subjected to recall bias.

Conflict of Interest

The authors declare that they have no conflicts of interest.

Authors' Contribution

All authors participated in the design and the methodological assessment of the study. LC conceived the research idea, DKI, NNK, LC collected, analyzed and interpreted the data under the supervision of PJN and ENB. DKI drafted the work and all authors revised and approved the final manuscript.

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TABLES

Table 1: Sociodemographic distribution of the participants

Characteristics	Category	Frequency	Percentage [%]
Age_group	20-29	5	7.1
	30-39	14	20.0
	40-49	17	24.3
	50-59	22	31.4
	>60	12	17.2
Marital status	Married	49	70.0
	Single	14	20.0
	Widow	7	10.0
Educational level	University	9	12.9
	high school	23	32.9
	Secondary	23	32.9
	Primary	15	21.4

Profession	Business	35	50.0
	civil servant	14	20.0
	Farmer	18	25.7
	Others	3	4.3
Religion	Christianity	67	95.7
	Pagans	3	4.3

Table 2: Occurrence of any disease

Any disease	Frequency/%
No	56 (80)
Yes	14 (20)
Total	70 (100]

Table 3: Proportion of self-medication

Self-medication	Frequency/%
No	56 (80)
Yes	14 (20)
Total	70 (100)

Table 4: Proportion of self-medication among different sub groups of the population and association

Characteristics	Category	Frequency		P – value
		Yes	No	
Age_group	20-29	2	5	0.73
	30-39	2	10	
	40-49	6	17	
	50-59	2	17	
	> 60	2	7	
	Total	14	56	
Marital status	Married	9	40	0.036
	Single	5	9	
	Widow	0	7	
	Total	14	56	
Educational level	University	8	15	0.0407

	high school	0	15	
	Secondary	5	18	
	Primary	1	8	
	Total	14	56	
Profession	Business	9	26	0.528
	civil servant	2	12	
	Farmer	2	16	
	Others	1	2	
	Total	14	56	
Religion	Christianity	13	54	0.555
	Pagan	1	2	
	Total	14	56	

Table 5: Awareness of Self Medication

Awareness of self-medication	Frequency/%
Yes	10 (14.3)
No	60 (85.7)

Table 6: Factors Associated with Self Medication

	Response	yes	No	p -value
Save money	Yes	6	44	0.021
	No	8	12	
	Total	14	56	
Knowledge About it	Yes	5	15	0.508
	No	9	41	
	Total	14	56	
Past experience	Yes	5	16	0.602
	No	9	40	
	Total	14	56	
Advice from family member	Yes	10	20	0.016
	No	4	36	
	Total	14	56	
Presence of Medication at home	Yes	13	27	0.003
	No	1	29	

	Total	14	56	
Easy Access to drug store	Yes	10	21	0.022
	No	4	35	
	Total	14	56	

Table 7: Participants Knowledge Before Intervention

Question	Options	Frequency/%
Definition of self-medication	Self-medication is the use of medications without prior medical consultation.	5 (84.4)
	It is the act of buying medication for yourself.	0 (0)
	It is when the doctor asks the patient to buy medication for themselves.	0 (0)
Correct statement about self-medication.	It is the best treatment method.	6 (100)
	It could lead to adverse drug reactions.	0 (0)
	It increases the chances of recovery.	2 (33.3)
	Drug resistance is adverse effect of self-medication	1 (16.6)
Effects of self-medication	Adverse drug reactions	3 (50)
	Too cheap	0 (0)
	Risk of double medication and harmful interactions	3 (50)
	Risks of dependence and abuse	0 (0)
	Over- and under dosing of medicines	5 (84.4)
	Makes the doctor's work	0 (0)

Table 8: Participants knowledge after Intervention

Question	Options	Frequency/%
Definition of self-medication	Self-medication is the use of medications without prior medical consultation.	48 (71.6)
	It is the act of buying medication for yourself.	19 (23.3)
	It is when the doctor asks the patient to buy medication for themselves.	0 (0)
Correct statement about self-medication.	It is the best treatment method.	0 (0)
	It could lead to adverse drug reactions.	44 (65.6)
	It increases the chances of recovery.	0 (0)
	Drug resistance is adverse effect of self-medication	57 (85.0)
Effects of self-medication	Adverse drug reactions	63 (94.0)

Too cheap	
Risk of double medication and harmful interactions	21 (31.3)
Risks of dependence and abuse	15 (22.3)
Over- and under dosing of medicines	14 (20.9)
Makes the doctor's work	0 (0)

Table 9: Paired two samples test for mean to compare the mean score of knowledge before and after intervention

Grade	Before intervention Freq/%	After intervention Freq/%	p-value
Excellent	0 (0)	7 (10.4)	<0.001
Very good	0 (0)	19 (28.4)	
Good	0 (0)	0 (0)	
Acceptable	2 (2.9)	25 (37.3)	
Poor	68 (97.1)	16 (23.9)	
Total	70 (100)	67 (100)	

Table 10: Attitudes towards self-medication before intervention

Options	Frequency (Percentage %)	
	YES	NO
Self-medication is part of self-care	43(61.4)	27(38.6)
Starting and continuing therapy without consult	0(0)	70(100)
Recommending self-medication to others	60(85.7)	10(14.3)
Going to the pharmacy and buying medications when sick	10(14.3)	60(85.7)
Teaching on self-medication	02(15.7)	65(84.3)
Simplifying access to health facilities	17(24.3)	53(75.7)

Table 11: Attitudes towards self-medication after intervention

Options	Frequency (Percentage %)	
	YES	NO
Self-medication is part of self-care	43(61.4)	27(38.6)
Starting and continuing therapy without consult	0(0)	67(100)
Recommending self-medication to others	18(25.7)	49(70)
Going to the pharmacy and buying medications when sick	1(1.4)	66(94.6)
Teaching on self-medication	65(97.4)	02(1.4)
Simplifying access to health facilities	1(2.9)	66(92.8)

Table 12: Paired two samples test for mean to compare the mean score of attitude before and after intervention

Grade	Before intervention Freq/%	After intervention Freq/%	p-value
Excellent	7 (10)	65 (97.0)	<0.001
Very good	0 (0)	0 (0)	
Good	0 (0)	0 (0)	
Acceptable	55 (78.6)	2 (3.0)	
Poor	8 (11.4)	0 (0)	
Total	70 (100)	67 (100)	

FIGURE

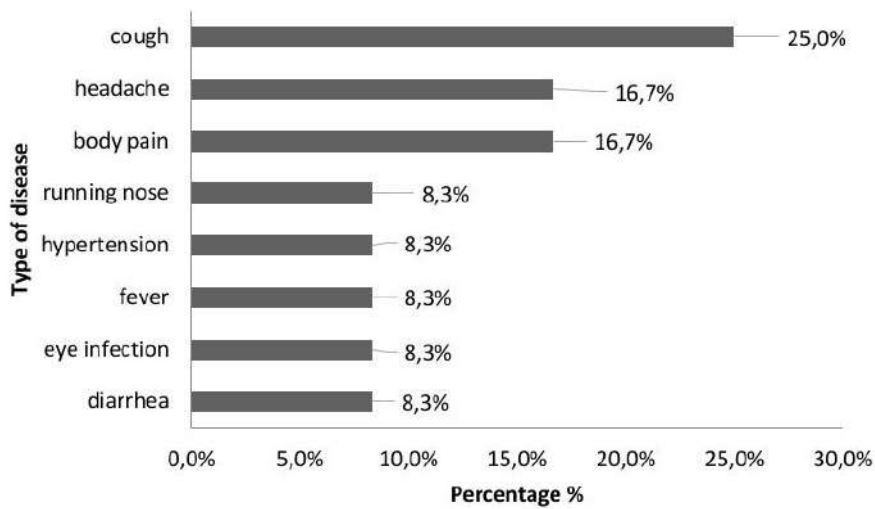


Figure 1: Self-medicated disease conditions