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Self-Medication Practices among Health Sciences Students: The Case of Mekelle University

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ABSTRACT

Self-medication is the selection and use of non-prescription medicines by individuals' own initiatives to treat self-recognized illnesses or symptoms. It is practiced significantly worldwide even though its type, extent and reasons for its practice may vary. No data is available on the current status of self-medication practices among health sciences students of Ayder campus of Mekelle University (ACMU). Descriptive cross sectional study was conducted on 307 health sciences students in ACMU from April to June 2011. Pre-tested and validated questionnaires were employed as tools for data collection. Study populations were determined by using two stages stratified random sampling methods. Among 148 reported illnesses prior to the study period, 94(63.50%) were males and 48(36.50%) were females with mean age of 21.5(18-25) years. The prevalence of self-medication in this study was 43.24% with most frequently reported symptom being headache 33(51.56%) followed by cough and common cold 28(44.80%). The two main reasons for self-medication were prior experience 25(39.10%) and mildness of the disease 24(37.50%). Paracetamol 31(48.44%) and NSAIDs 27(42.20%) were the two most frequently consumed medications with drug retail outlets 26(40.63%) as the main source of drugs to practice self-medication. Self-decisions 41(64.00%) followed by family/friends 20(31.65%) were the two most frequently reported source of drug information for self-medication in this study. More than half of the respondents disagreed with the practice of self-medication in the present study. Moreover there were statistically significant differences between respondents who reported practicing self-medication based on gender, specific field of study and study year.

Keywords: Self-medication, prevalence, practices, students, health sciences, respondents, Ayder campus.

INTRODUCTION

Self-care is what people do for their own selves to establish and maintain health, prevent and deal with illness (WHO, 1998). It is a broad concept encompassing hygiene, nutrition, lifestyle, environmental factors, socioeconomic factors and self-medication (Al Khaja *et al.*, 2006, Alano *et al.*, 2009). Self-medication, as one element of self-care, is the selection and use of medicines by individuals to treat self recognized illnesses or symptoms (WHO, 1998). It is use of nonprescription medicines by people on the basis of their own initiatives. Husain A and Khanum A, (2008) also defined self-medication as obtaining and consuming medication without professional supervision regarding indication, dosage, and duration of treatment. However, self medication is not necessarily means the consumption of modern medicines but also of herbs (Partha *et al.*, 2002).

Medicines for self-medication are often called 'non-prescription' or 'over the counter' (OTC) and are available without a doctor's prescription through pharmacies. In some countries OTC products are also available in supermarkets and other outlets. Medicines that require a doctor's prescription are called prescription products (Rx products). Self-medication with OTC medicines is sometimes referred to as 'responsible' self-medication to distinguish it from the practice of purchasing and using a prescription medicine without a doctors' prescription. Self-medication is widely practiced in both developed and developing countries. As a result medications may be approved as being safe for self-medication by the national drug regulatory authority. Such medicines are normally used for the prevention or treatment of minor ailments or symptoms, which do not justify medical consultation. In some chronic or recurring illnesses, after initial diagnosis and prescription, self-medication is possible with the doctor retaining an advisory role (Partha *et al.*, 2002).

Studies revealed that there is an increase in trends of self-medications particularly among the youth. This can be attributed to socio-economic factors, life style, ready access to drugs, the increased potential to manage certain illnesses through self-care, and greater availability of medicinal products, socio-demographic, epidemiological, availability of healthcare and health professional, law, society and exposure to advertisement; high level of education and professional status (Alano *et al.*, 2009). Moreover, knowledge of drugs and their use are the main causes of self-medication especially among pharmacists and physicians (Al Khaja *et al.*, 2006).

In most illness episodes, self-medication is the first option which makes it a common practice worldwide. In the treatment of minor illness, when problems are self-limited, self-care can be used. The criteria for considering health problems as a minor illness include having limited duration and being perceived as non-threatening to the patients. For government institutions, this can reduce costs while allowing health professionals to focus on more serious health problems (Alano *et al.*, 2009). In economically deprived countries most episodes of illness are treated by self-medication (G/Mariam and Worku, 2003). In a number of developing countries including Ethiopia, many drugs are dispensed over the counter without medical supervision. In this case, self-medication provides a lower cost-alternative for people who cannot afford the cost of clinical services. The common episodes for which most people go for self-medication include, but not limited to colds and flu, heart burn, infrequent and difficulty of passing stool, minor skin problems, insect bites and many others (G/Mariam A and Worku S, 2003). Though the practice of self-medication is as old as mankind itself, little has been exploited. If used appropriately, self-medication could lighten the demand on doctors and make people more health conscious. However, if abused, it could delay accurate diagnosis and appropriate treatment, and could cause toxicity, side-effects, drug interaction and unnecessary expenditure (Arzi A *et al.*, 2010). The use of drugs from informal sectors such as open markets and village kiosks encourage the practice of self-medication (Baruzaig A and

Bashrahil K, 2008). In order to handle unnecessary health risk and bacterial resistance due to improperly obtained drugs, it is important to consider the manners of drug availability to consumers. Unlike in the developed countries, illegal purveyors of drugs are common in developing countries along with some practitioners. There is much anecdotal evidence of self-medication with such drugs and inappropriate purchasing of medicines for a particular condition though few studies have quantified their extent (G/Mariam and Worku, 2003).

Nowadays people are keen to accept more personal responsibility for their health status and to obtain as much sound information as possible from expert sources in order to help them make appropriate decisions in health care. Pharmacists have a key role to play in providing them with assistance, advice and information about medicines available for self-medication. Moreover, the internet is emerging as a major source of information on health issues and (with appropriate control) offers great promise in helping people with self-care. The type and extent of self-medication and the reasons for its practices may vary from country to country. In developing countries, both modern drugs and traditional medicines are commonly used for self-medication (Bond CM and Bradley C , 1996; Abulal T and Worku A, 2001; WHO/FIP , 2006; Baruzaig A and Bashrahil K, 2008; Kayalvizhi S and Senapathi R, 2010; Mohan L *et al* 2010; Abay S and Amelo W , 2010; Bajait C *et al*, 2011). Even though self medication is a useful tool to treat minor ailments, improper self medication practice or medication abuse may lead to serious adverse drug reactions and possibly fatal consequences. Moreover, currently, there is a worldwide concern about the emergence of antibiotic resistant strains of micro-organisms which might have been highly augmented by self-medication. There is, therefore, a need to know the prevalence, determinants and risk factors associated with self-medication practices among the various segments of the community to devise appropriate educational, regulatory and administrative measures utilized in alleviating the public health risks arising from improper practices of self-medication. No data is available on the current status of self-medication practices among health sciences students of Ayder Campus of Mekelle University (ACMU) which the current study aimed to generate.

Objective

This study aims to provide basic information on self-medication practices among health sciences students in Ayder campus of Mekelle University, Ethiopia. It also estimates the prevalence of self-medication in the study population.

METHODOLOGY

Study area and period

This study was conducted in Ayder Campus of Mekelle University (ACMU) found in Mekelle. Mekelle is the capital of Tigray, Northern Ethiopia, situated at 783 km to the North of Addis Ababa. Mekelle University is one of the 23 public funded Universities in Ethiopia established in four campuses. Ayder campus encompasses the College of Health Sciences in which

regular medical students from first to sixth year; third and fourth year pharmacy students; second and third year public health, comprehensive nursing and midwifery nursing; and other postgraduate, in-service, summer and extension students are enrolled. The Ayder referral hospital is also found in this campus. Data collection period was from April to June, 2011.

Study design, study population and sampling

Study design

Descriptive cross sectional study.

Study Population and sampling

There were a total of 1218 students of Health Sciences including Medical, Pharmacy, Public Health, Comprehensive and Midwifery Nursing. Considering 95% confidence interval, 5% margin of error and 5% contingency for loss, 307 students were taken from the five disciplines as study population. As there was no previous study conducted in ACMU on the current topic, a 50% expected prevalence of self-medication was used. Two step stratified random sampling was used to collect the data, i.e., sampling from each Department, and then sampling from each study year based on appropriate proportion of the respective field of study.

Study tools

Pre-tested questionnaires which were prepared in English and consisting of three parts were employed to collect all relevant data.

Consents

The objectives of the study were explained to the study participants prior to data collection, and their consents were sought, and the questionnaires were filled only by those who agreed.

Data entry, analysis and interpretation

Analysis was done by combinations of manual calculator and Vassar stats (statistical tables' calculator) and also SPSS software package. A statistical significance level of 0.05 was used to determine the association between variables. The results were presented in absolute figures (percentages) as depicted in Tables, Figures and Charts.

RESULTS AND DISCUSSION

Of the total of 307 questionnaires distributed to be filled by respondents, 283 were filled completely and collected, which gives the response rate of 92.2%. Moreover, 24(7.8%) of the questionnaires were rejected based on exclusion criteria such as incomplete information.

Socio- demographic data

Age, sex, Department and Study year distribution of those who had episodes of illnesses in the specified period is shown in

Table 1. Ninety four (63.50%) were males and 54(36.50%) were females. The mean age of study participants was 21.5 (18-25) year. And also 75(50.70%), 25(17.00%) and 48(32.30%) were from the Departments of Medicine, Pharmacy, and other health sciences including Public Health, Comprehensive and Midwifery Nursing, respectively. In terms of their study year distribution 25(16.70%), 33(22.40%), 63(42.56%), 23(15.64%) and 4(2.70%) were from first, second, third, fourth and fifth year students.

Table 1: Socio- demographic characteristics of students who reported illness from February to April 2011 in ACMU (Ayder Campus of Mekelle University), N=148.

Variable		Frequency	Percentage
Sex	Male	94	63.50
	Female	54	36.50
Age	18-25	148	100
Department	Medicines	75	50.70
	Pharmacy	25	17.00
	Other health sciences	48	32.30
Study year	First	25	16.70
	Second	33	22.40
	Third	63	42.56
	Fourth	3	15.64
	Fifth	4	2.70

The types, extent and reason for self-medication can vary from country to country which might be due to study methodologies utilized and also the different socioeconomic and socio-demographic factors. Out of 148 respondents, 64 respondents reported self-medicated. Self-medication was practiced by 32(42.67%) of medical students, 19(76.00%) of pharmacy students and 13(27.08%) of other health sciences students. And also out of 54 females who reported illnesses, 30(55.55%) of them self-medicated. By the year of study, 36.00% of first year; 18.00% of second year; 58.70% of third year; 43.50% of fourth year and 50.00% of fifth year students practiced self-medication from February to April 2011 in ACMU. In this study females practiced self-medication more frequently than males ($p<0.05$) and this finding is in agreement with the study done in Jimma, by G/Mariam A and Worku S, (2003), that identified females as the fundamental elements in the consumption of OTC drugs and employment of self-medication. The prevalence of self-medication among female students in the current study is low when compared to a similar study conducted by Ali S *et al.*, (2010) in Malaysia. There is also a significant difference between the self-medication practices among the Departments in the present study unlike other study done in Gondar (Abay S and Amelo W, 2010). Pharmacy students practiced self-medication more frequently than Medical and other paramedical students ($p=0.00032$). This could be due to the compositional differences in drug-related courses taken by the different disciplines of Health Sciences. By virtue of the nature of the courses (qualitative and quantitative) they take, Pharmacy students are more likely to have deeper knowledge on medicines and hence practice more self-medications as compared Medical and other Health Sciences students. On the other hand, there was no significant difference between self-medication practices of medical and other paramedical students ($p>0.05$). The fact that internship students of the Department of Medicines

haven't been included in the study (as they live out of campus in neighboring towns where hospitals are available for attachment) might have contributed to these results. There is an association between the year of the study and self-medication practices ($p=0.00067$) in the current study. A similar study done in Gondar University (Abay and Amelo, 2010) also indicated an association between the two variables. This could be due to the fact that as the students' year of study increases, they take more practical oriented courses and hence their knowledge and understanding about drugs and diseases would increase that help them make right selection of their medicines for self-medication of presumed minor ailments. The general indication is, though, that students' self-reliance for their own health conditions will be increasing with their year of study.

Self-medication practice assessment data

The most common types of ailments for which the respondents reported to have practiced self-medication were headache, followed by cough/common cold, dysmenorrhea, and dyspepsia with the respective episode prevalence of 33(51.56%), 28(44.80%), 13(20.30%), and 11(17.20%) as shown in Table 2. Others like loss of appetite, fatigue, insomnia, stress etc were also reported though few.

Table 2: Frequency of reported symptoms/conditions for those self-medicated from February to April 2011 in ACMU, (N=64).

Types of symptoms or illness	Frequency	Percentage
Headache	33	51.56
Cough and common cold	28	44.80
Dysmenorrhea (painful menses)	13	20.30
Dyspepsia/heart burn	11	17.20
Fever	9	14.10
Diarrhea	7	10.90
Constipation	6	9.40
Cough and chest pain(like pneumonia)	5	7.80
Skin problems	2	3.13
Others	11	17.20

N.B: Some questions had multiple options respondents could select and hence the sum of the percentages is not always 100%.

Abay S and Amelo W also indicated that the most prevalent symptoms reported in Gondar University in 2010 were headache, followed by cough and common cold. Another study conducted on the Palestinian University students also reported that headache (76.60%), flu (46.20%) and menstrual pain (34.70%) were the commonest reported symptoms for self-medication (Sawalha A, 2007). However, a study conducted in India indicated that fever, headache; and cough/common cold were the most frequently reported illnesses for the practice of self-medication (Kayalvizhi S and Senapathi R, 2010). Thus, as reported in different findings, headache, fever, cough/common colds are the commonest minor ailments/symptoms for which University students get treatments by practicing of self-medication.

Sixty four of the 148 respondents (43.24%) had practiced self-medication in the current study; while 57(38.52%) and 27(18.24%) of them sought medical services and took no action, respectively (Figure 1).

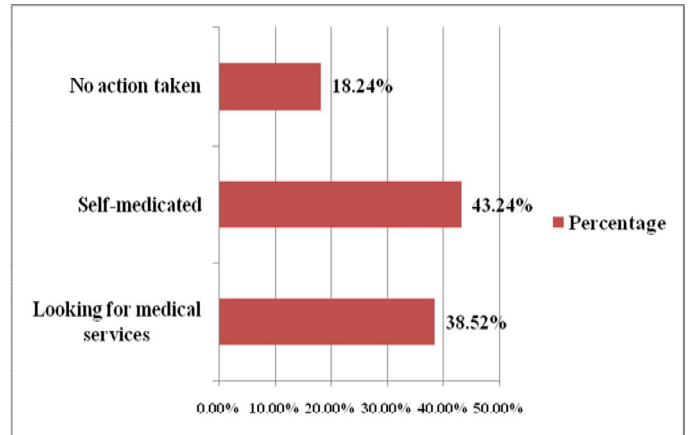


Fig 1: Measures taken by those who reported illnesses from February to April 2011 in ACMU, (N=148).

The prevalence of self-medication in this study is therefore 43.24%. This result is almost similar with the study done in Islamabad, Pakistan among university students which was 42% (Husain A and Khanum A, 2008). The other study done in Gondar University among medical, pharmacy and health sciences students also indicated the prevalence of self-medication to have been 38.20% (Abay S and Amelo W, 2010) which shows that there is no much significant difference with the current study. This might be due to the fact that both studies were done on the students of the same field of study. The prevalence of self-medication amongst university students in other studies were found to be about 76% in Pakistan; 45% in Turkey, 88% in Croatia, 94% in Hong Kong (Ali S, *et al.*, 2010), and 98% in Palestine (Sawalha A, 2007). Hence, it is difficult to compare the results in different University student populations mainly due to the variation in socioeconomic profiles and demographic characteristics and also because of different methodologies used in finding out the prevalence of self-medication. The percentage of the students who did not take any measure against their illness in this study (18.24%) is almost similar to other study done in Gondar University (18.30%) (Abay S and Amelo W, 2010). Twenty five (39.10%), 24(37.50%), and 10(15.63%) of the respondents in this study reported that they used self-medication because they had prior experience of treating a similar illness, they had minor (mild) illness and did to avoid long waiting time for medical services, respectively (Table 3).

Table 3: The reasons for self-medication given by respondents who self-medicated from February to April 2011 in ACMU, (N=64).

Reasons	Frequency	Percentage
Prior experience	25	39.10
Mildness of illness	24	37.5
Long waiting time	10	15.63
Less costly	3	4.69
Lack of interest in medical services	1	1.56
In emergency use	0	0.00
Others	3	4.69

N.B: Some questions had multiple options respondents could select and hence the sum of the percentages is not always 100%.

Prior experience (39.10%) and mildness of the illness (37.50%) were the two major reasons provided by the respondents for self-medication in this study. The same reasons were also reported in a similar study in Gondar (Abay S and Amelo W, 2010). However, mildness of disease (58.00%) and previous experience (29.00%) were the two major reasons reported in the study conducted in Palestine (Sawalha A, 2007), even though the other reason, "less costly" was majorly reported in other study conducted in Jimma (35.70%) (G/Mariam A and Worku S, 2003). Surprisingly, none of the respondents reported self-medication in emergency uses in the present study while 15.80% of the respondents reported self-medication for emergency in the study conducted in Gondar (Abay S and Amelo W, 2010). Generally, low severity of symptoms/illnesses is frequently reported in literature and different surveys as the main cause for the practice of self-medication (Baruzaig A and Bashrahil K, 2008; Kayalvizhi S and Senapathi R, 2010; Mohan L *et al* 2010; Abay S and Amelo W, 2010; Bajait C *et al*, 2011). Twenty six (40.63%), 10(15.63%) and 9(14.10%) of the respondents said that they obtained the drugs for self-medication from drug retail outlet, friends/relatives, and open markets, respectively, as shown in Figure 2 below.

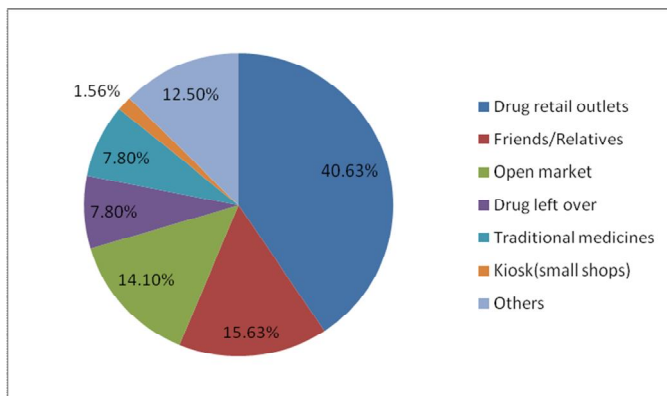


Fig 2: The reported sources of medicines for those who practiced self-medication from February to April 2011 in ACMU, (N=64).

The main source of medications for those self-medicated was drug retail outlets, followed by friends/relatives, and open markets in the present study. Drugs retail outlets (52.40%), open market (19.00%) and drugs left over past prescription (11.00%) were reported in a similar study done in Jimma (G/Mariam A and Worku S, 2003). The availability of drugs in informal sectors such as open markets and kiosks (small shops) encourage the rampant practice of self-medication. In order to decrease unnecessary health risk and bacterial resistance due to improperly obtained and used drugs, it is important to consider the manners of drug availability to consumers. The most common classes of drugs used in self-medication in the current study were analgesics, in particular, Paracetamol, which was reported by 31(48.44%) of the respondents followed by Non-Steroidal Anti-inflammatory Drugs (NSAIDs) as reported by 27(42.20%) of the respondents. Other common types of medications reported were antibiotics 11(17.20%), cough syrup 8(12.50%) and antacids 5(7.80%) as shown in Table 4 below.

Table 4: Medications (medication classes) reported by the respondents who self-medicated from February to April 2011 in ACMU, (N=64).

Medication/classes of medication	Frequency	Percentage
Paracetamol	31	48.44
NSAIDS	27	42.20
Antibiotics	11	17.20
Cough syrup	8	12.50
Antacids	5	7.80
Topical agents	3	4.69
Herbal remedy	3	4.69
Anti-helmentics	3	4.69
I did not remember	3	4.69

N.B: Some questions had multiple options respondents could select; therefore, the sum of the percentages is not always 100%.

Paracetamol and NSAIDs like Ibuprofen, Diclofenac and Endomethacine were the most commonly used class of drugs, followed by antibiotics in this study. One study in Mozambique by Lucas R *et al* 2010, also reported similar findings. Analgesics (non-narcotics) especially NSAIDs were the most common class of medications used in the self-medication practices as reported in many studies in other areas (Sawalha A, 2007; Baruzaig A and Bashrahil K 2008; Abay S and Amelo W, 2010). This is because such drugs are used to treat simple common illness, example, headache, fever and pain. However, NSAIDs have their own possible adverse effects if they are misused and abused, mainly hepatic dysfunction and renal failure as reported earlier by Baruzaig A and Bashrahil K (2008). Moreover, the increasing trend towards self-medication raises questions about the potential for GI complications with OTC doses of NSAIDs. Although there is some evidence that the frequency of GI complications with OTC doses may be less than that seen with prescription doses, it still exists (Tadege T, 2002). In light with our current understanding and because paracetamol continues to demonstrate a favorable side-effect profile, it remains to be a first line analgesic for everyday pain. Thus, especially in the case of pain management, self-medication was found to be the dominant mode of health seeking behavior in the current study. Eleven (17.20%) of those self-medicated used antibiotics in the present study which is comparable to 19.90% in a study conducted in Palestine (Sawalha A, 2007). This figure is high when compared to the study done and reported in Gondar University by Abay S and Amelo W, (2010), which was 4.80%. This might imply that in Mekelle, antibiotics could be obtained from drug retail outlets without prescription though they are prescription only medicines. Self-medication with antibiotics can lead to the emergence of the dangerous worldwide problem of antibiotics resistant micro-organisms. Cost and toxicity can also be indicated as problems associated with the use of antibiotics in self-medication. Moreover, Arzi A *et al*, (2010), argue that people may abuse antibiotics by using them for such wrong indications as common cold or infections of non-bacterial origin. Thus, possible interventions must be developed by both drug regulatory and health authorities to create awareness among students about the consequences of self-medication with antibiotics.

The most common information source for self-medication reported was self-decision 41(64.00%), family/friends 20(31.25%);

and media and reading material 9(14.10%). Respondents who practiced self-medication because of any advice by the pharmacist/druggist covered 6(9.40%); and of those self-medicated because of advice from physicians or other qualified healthcare professionals, but without prescription were 5(7.80%). No one reported to have been advised to practice self-medication by a herbalist in the current study (Figure 3).

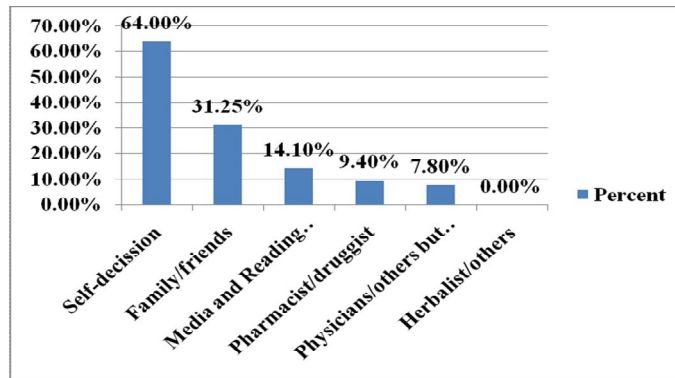


Fig 3: Sources of information/recommendation for those self-medicated from February to April 2011 in ACMU, (N=64).

N.B: Some questions had multiple options respondents could select and hence the sum of the percentages is not always 100%.

The major information source for those who practiced self-medication was self-decision in this study. Similarly, self-decision (47.00%), and advice from family/friends (41.00%) were the two most common sources of information to practice self-medication in study among medical and non-medical students in Palestine (Sawalha A, 2007). However, reading material was the main source of information (30.50%) while advice from herbalist/traditional healers accounted least (3.70%) in another study reported by Abay S and Amelo W, (2010) in Gondar University. But in this study, none of the respondents were recommended to practice self-medication by a herbalist indicating the fact that students mainly depend on modern drugs for self-medication that might have been influenced by their fields of study, among others.

When asked if they would use any alternatives to self-medication in case of no relief, about 61(95.30%) of self-medicated respondents replied that they would have looked for modern healthcare services at hospitals, health center or clinics. However, only 3(4.70%) of those self-medicated respondents said that they had no alternatives to self-medication (Table 5).

Table 5: Solutions reported, if self-medication hadn't brought relief to illness, for those self-medicated from February to April 2011 in ACMU, (N=64).

Solution	Frequency	Percentage
Looking for modern medical services	61	95.30
No alternatives to self-medication	3	4.70
Total	64	100

The fact that 61(95.30%) of self-medicated students would have looked for modern health care services had their conditions been persisted indicates that students know to what

extent they practice self-medication by self-decision. This result is high when compared to the finding of other study (80%) done in North West of Ethiopia (Abula T and Worku A, 2001) which assessed practice of self-medication among the ordinary populations of three towns excluding University students. This difference clearly shows the degree to which students perceive their health related problems and the knowledge they have about where to go to get relief as compared to other ordinary populations. The students' knowledge about possible adverse effects of the drugs of their choices were also assessed. Accordingly, 54(84.40%) of them had knowledge about possible adverse effects of drugs they used. This might be because almost all of them have taken pharmacology course at least once during their study; and possibly they have learnt by experiencing the adverse effects by themselves. The measures they would take in case of experiencing adverse effects of drugs of their choice were also assessed. The results showed that 19(38.00%) of respondents would consult pharmacist, 25(50.00%) of respondents would consult other qualified health professionals like physicians while 6(12.00%) of respondents would not take any measure. Thus Physicians and Pharmacists should be in positions to deliver valuable information on the pros and cons of self-medication as they are reported to have been the most widely preferred source by the consumers for non-prescription medicines information.

Attitude towards self-medication practices

Out of 283 respondents, only 104(36.70%) agreed with the practice of self-medication while majority of them 148(52.30%) disagreed. Unexpectedly, 31(11.00%) of the respondents had no comment on practice of self-medication as illustrated in Figure 4 below.

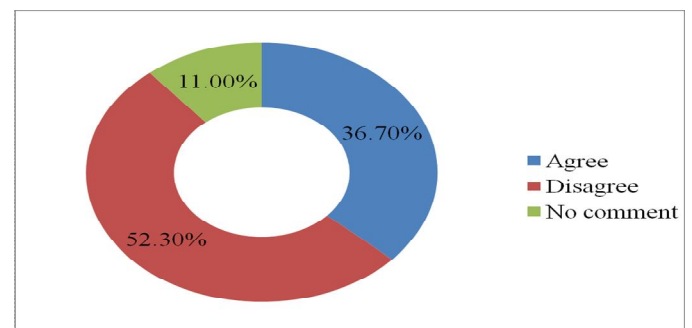


Fig 4: Attitudes of respondents towards self-medication practices in ACMU, (N=283).

Unlike in the current study, many respondents reported positive attitudes towards self-medication practices in other studies. For instance, 76.90% of respondents in Bahrain (Al Khaja *et al.*, 2006), 85% of respondents in India (Kayalvizhi S and Senapathi R, 2010) and 55.50% of respondents in Gondar (Abay S and Amelo W, 2010) had positive attitudes towards self-medication practices. Because self-medication is one component of self-care, more awareness about the responsible self-medication is needed to foster the level of students' attitudes towards self-medication practices.

Conclusion and recommendations

A significant number of students, 43.24%, practiced self-medication even though the majority of them had poor attitudes towards self-medication practices at the ACMU. Analgesics, particularly Paracetamol, NSAIDs, antibiotics, and cough syrup were the most commonly reported types of medications consumed in self-mediations, all of which were obtained from drug retail outlets.

Headache, cough/common cold and dysmenorrhea were the three most commonly reported conditions for self-medication practices in the current study. The major reasons indicated for self-medication by respondents were prior experience and mildness of the illness. Self-medication is one of the components of self-care adopted by the WHO. Though significant number of students self-medicated in this study, majority of them did not support self-medication practices. Thus, drug regulatory and health authorities have to dedicate some resources used to raise awareness of the students and the general public on the pros and cons of responsible self-mediations to eventually improve their attitudes towards the practices of self-medication. Moreover, it might be helpful if the concepts and principles of self-medication could be reflected in the formal curricula of health care disciplines in Ethiopia.

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