

Utilization pattern of Self Medication among Allied Health Undergraduates with focus on Knowledge and Attitudes

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Abstract

Self-medication (SM) is a common practice among university students as a part of self-care. Allied Health Science (AHS) students may have different behaviors and views on SM, as they expose to medication knowledge more comparing to other university students. Sri Lanka lacks such evidence and this cross sectional study was performed to evaluate the practice of SM among AHS undergraduates along with their knowledge and attitudes. A self-administered questionnaire was administered among 233 AHS undergraduates of University of Ruhuna. The prevalence of SM among AHS undergraduates was found as the 93.1%. 1st year and Medical Laboratory Sciences (MLS) undergraduates had higher prevalence of SM. Antipyretics and vitamins were the most commonly reported types of medications consumed which were obtained from pharmacies most frequently. Headache and fever were commonly reported ailments for SM. The major reasons indicated for SM were to save time and prior experience of the illness while using the academic knowledge as the source of information. Most of the undergraduates had high and moderate level of knowledge with positive attitudes. Degree programme was associated with prevalence of SM and level of knowledge on SM. Rise of awareness of the undergraduates on implications of medications was suggested by most of the students significantly. This study revealed SM as a common practice among AHS undergraduates as a part of self-care and they practice SM with high level of knowledge and positive attitudes.

Keywords – Self-medication, AHS undergraduates, practices

1. INTRODUCTION

Self-administration of medicine which is called SM is now increasing worldwide as a considerable component of self-care among different people. SM is defined as obtaining and consuming drugs without the advice of a physician either for diagnosis, prescription or surveillance of treatments (James H *et al.*, 2006). This includes acquiring medication without a prescription or resubmitting of old prescription to purchase medicines, sharing medicines with relatives or family members of one's social circle or using leftover medicines stored at home. It is true that SM can help treat minor ailments which does not require the medical consultation and hence reduce the burden on medical services particularly

in developing countries with limited health care resources.

Studies revealed that there is an increase in trend of SM particularly among the youth that can be attributed to socio-economic factors, life style, easy access to drugs, the increased potential to manage certain illnesses through self-care, exposure to advertisement, high level of education and professional status (Akbar JZ *et al.*, 2009). Moreover, knowledge of drugs is the main cause of SM especially among health care workers especially the allied practitioners (James H *et al.*, 2006). This raises concerns of incorrect self-diagnoses, drug interaction and misuse for other than the indications.

It was reported that SM practices are more common among university students and age, gender, type of degree programme they follow and medication knowledge are important factors that are associated with the selection of SM (Sawalha, A, 2005).

Allied Health Sciences (AHS) students differ from the general university student population as they are exposed to a broad area of subject matters on pharmacology and clinical practice. As they are the mere beginners of health care management, they do not possess an adequate knowledge to make autonomous decisions on their own health. The rational use of SM could not be expected from them as they have inadequate knowledge and experience.

Ehigiator O *et al* (2013) revealed that SM is a common practice among dental, nursing and midwifery students. And in New Delhi, SM is considerably high among medical and paramedical undergraduates and that usage is increased with their medical knowledge (AIIMS study, 2008).

There is a paucity of literature on the prevalence and related knowledge and attitude towards SM in Sri Lanka. This study was performed to assess the Practices, Knowledge and Attitudes of SM and the associated factors among AHS undergraduates.

2. METHODOLOGY

This cross sectional study was targeted on undergraduates in AHS degree programme, Faculty of Medicine, University of Ruhuna. Sample comprised of all the AHS students including B.Sc. Nursing, B.Sc. Pharmacy and BSc MLS undergraduates (n=287).

The data were collected by a pre-tested semi-structured, self-administered questionnaire. The questionnaire consisted 04 sections (sociodemographic characteristics,

practices, knowledge and attitudes). Gender, degree programme, academic year and ethnicity were asked under sociodemographic section. Prevalence of SM, common reasons for SM, common medications they use as SM, common ailments they use SM, sources of obtaining medications, sources of information regarding SM were evaluated under practice section. Knowledge section included 09 theoretically correct questions on commonly used medications which were focused on their action, side effects, usage, storage and precautions ...etc. Attitude section was focused on 08 attitude statements to provide response on five point Likert scale as strongly agree, agree, no idea, disagree and strongly disagree. Behavioral changes of SM after entering to the degree programme and suggestion for rational use of medications were asked at the end. Data were collected within the AHS premises without interfering teaching learning activities of students during April to June 2015. Ethical clearance was obtained from Ethical Review Committee, Faculty of Medicine, University of Ruhuna. Written Informed consent was obtained from each participant.

Data were analysed using SPSS 20.0. Pearson’s Chi square test of independence was performed to assess the association of demographic variables (Gender, Nationality, Degree Programme, Academic year, Family member in health sector), level of knowledge and type of attitude with prevalence of SM usage. Again same test was applied to assess the association of same variables with the level of knowledge on SM and attitude on SM. Statistical significance was set at $p < 0.05$. Some questions had multiple options that respondents could select and hence the sum of the total percentages was not always 100%.

3. RESULTS

A. Sociodemographic characteristics of the study population

Two hundred thirty three (233) undergraduates responded to the questionnaire out of 287. The response rate was 81.1%. Majority of the respondents were females (76.8%), Sinhalese (91.8%), 3rd year (34.3%) and nursing (48.5%) undergraduates. Of those, only 8.2% had a family member in health sector (Figure 1).

B. Prevalence and pattern of SM utilization

Two hundred seventeen undergraduates (93.1%) responded that they use SM as a self-care practice. 93.3% of females, 93.9% of Sinhalese undergraduates use SM. Majority of MLS students (98.4%) use SM. Most significantly 1st year undergraduates who are new to the programmes had a higher prevalence (96.2%) of SM practice and interestingly the prevalence had reduced when they got matured with the academic year (Table 1). Saving time was the most common reason they had reported for them to use SM (56.7%) followed by previous experience with same illness (47.6%) for which they had thought that the consultation of a doctor is not necessary again. Only 7.3% stated that they have

adequate knowledge to self-prescribe medication and 5.2% needed to protect their privacy (Figure 1). Headache (85.8%), pains (76.8%), fever (74.2%) were the commonest indications to use SM. 10.3% had taken SM for difficulty in sleeping and 5.6% for oral ulcers (Figure 2).

Majority used antipyretics (89.3%), Vitamins (58.4%), antibiotics (49.4%) and NSAIDS (45.5%). Only 6.9% had used sedatives as SM (Figure 3).

Table 1 – Frequency distribution of characteristics and usage of SM among each category of study participants N=233).

Characteristics	Sub category	Number (%)	Frequency of SM practice (%)
Gender	Male	54 (23.2)	50 (92.6)
	Female	179 (76.8)	167 (93.3)
Nationality	Sinhala	214 (91.8)	201 (93.9)
	Tamil	7 (3)	6 (85.7)
	Muslim	12 (5.2)	10 (83.3)
Degree programme	Nursing	113 (48.5)	106 (93.8)
	Pharmacy	58 (24.9)	50 (86.2)
	MLS	62 (26.6)	61 (98.4)
Academic year	1 st year	52 (22.3)	50 (96.2)
	2 nd year	41 (17.6)	39 (95.1)
	3 rd year	80 (34.3)	74 (92.5)
	4 th year	60 (25.8)	54 (90.0)
*FM in HCT	Yes	33 (8.2)	31 (93.0)
	No	200 (91.8)	186 (93.3)
Level of knowledge	Low	6 (1.7)	6 (100.0)
	Moderate	103 (45.1)	99 (96.2)
	High	124 (53.2)	112 (90.3)
Type of attitude	Positive	170 (73)	156 (91.8)
	Negative	63 (27)	61 (96.8)

(*Family member in Health care team – Doctor/nurse/midwife/MLT/pharmacist/PHI)

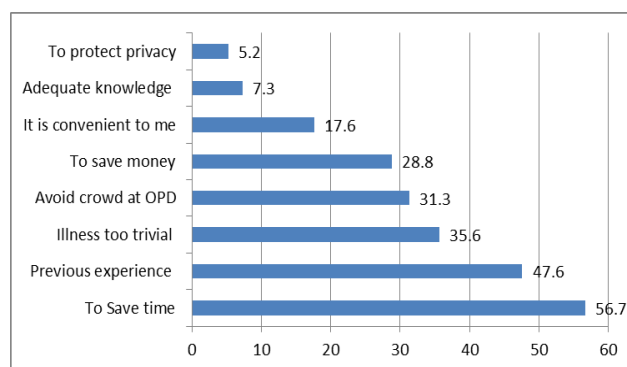


Figure 1 – Common reasons for SM by the study sample (n=217)

When they use SM as a self-care, they had taken medications most commonly from pharmacies (76%). Interestingly, they obtained medications from the old stock at the resident places (51.1%) while opening the door to huge adverse effects. Significant amount of students (22.3%) obtained medications from a known

health care worker while rest of the 13.3% obtained medications from a friend (Figure 4). Academic knowledge they had gained by learning of subject matters was highlighted by the participants as the most common source of information (71.7%), and 36.9% of undergraduates used their old prescription they had taken for same illness previously. Few had taken the information from internet (15%), BNF (14.6%), product information leaflet (9.9%) and from a friend (9%) (Figure-5).

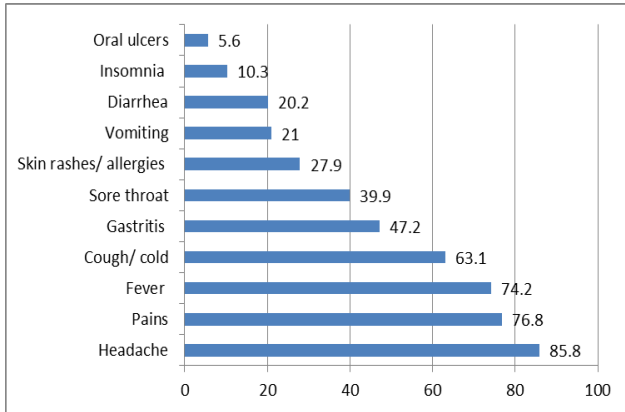


Figure 2 – Common indications/ailments for SM by the study sample (n=217)

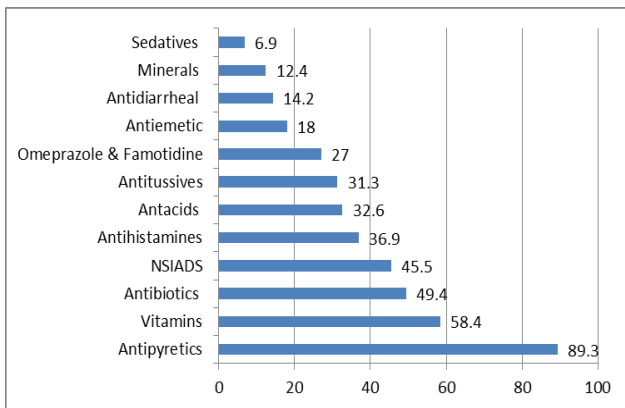


Figure 3 – Types of medications commonly self-medicated by the study sample (n=217)

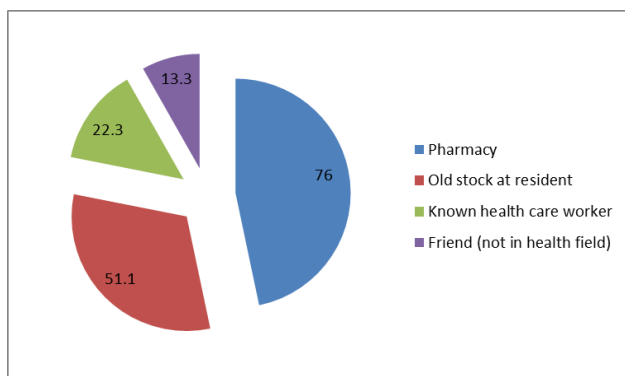


Figure 4 - Common sources of obtaining medications for self-medication by the study sample (n=217)

c. Knowledge and Attitude on SM

All the participants had correctly answered for the question on inappropriate usage of antibiotics. Correct answers were given by more than 57.9% of participants except the last which was on ointment usage. The frequency of true answer percentage is tabled in table 2. According to the scores they gained for knowledge questions their level of knowledge were categorized as high, moderate and low level of knowledge. 53.2% had high level of knowledge on the questions asked on SM. Only a small minority (1.7%) had a low level of knowledge (Table 1).

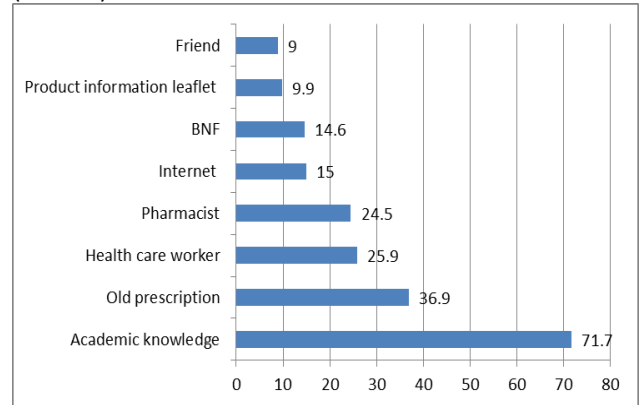


Figure 5 – Sources of information used to obtain information on medications for SM by the study sample (n=217)

Choices of attitudes are tabled in table 3. Majority of them believed that SM is a part of self-care (61.8%). Also, most of them were careful in taking SM (62.2%) while believing that they are confident enough in self-prescribing (48.1%). According to the scores obtained for attitude selection, they were categorized as positive and negative attitudes. Significantly, most of the participants (73%) had positive attitudes on SM (Table 1).

All the participants with low level of knowledge used SM. It gradually reduced when the participants' level of knowledge is increased. At the same time, the participant with negative attitudes had a higher prevalence of medication usage. Table 1 shows the prevalence figures of SM according to the level of knowledge and type of attitudes.

Degree programme was associated with the prevalence of SM (p=0.029) and level of knowledge (p = 0.000) on SM. (Table 4).

After entry to the degree programme, 64.4% (150) undergraduates had increased their behavior in SM and only 12% (28) had decreased the behavior with the knowledge they gained from the degree programmes while rest (23.6%, 55) had not changed their behavior.

Most of the participants (80.6%, 188) were in an opinion that SM needs to be promoted. Only few stated that it needs to be prevented (19.4%, 45). The appropriate methods to improve the rational use of drugs to promote SM were suggested by participants as awareness and education regarding the implication of SM (35.8%), enforcing strict rules for misleading pharmaceutical advertising (32.9%) and working towards making health care facilities easily available (31.3%).

3. DISCUSSION

This study revealed majority of the AHS students use SM as a part of self-care with high level of knowledge and positive attitudes. The prevalence of SM in this study was 93.1%. In studies conducted in India, non-medical students showed a prevalence of 80.1% in Tamil Nadu (Kayalvizhi S & Senapathi R, 2010) and 87% in Uttar Pradesh (Verma RK, Mohan I & Panday M, 2010). The prevalence of SM among university students in other studies were also found to be high about 76% in Pakistan, 88% in Croatia, 94% in Hong Kong (Ali SM, Ibrahim MJM & Palaian S., 2010), and 98% in Palestine (Sawalha A, 2007). Another study done in Gondar University among medical, pharmacy and health sciences students indicated a prevalence of SM as 38.20% (Abay SM and Amelo W, 2010) which shows significant difference with the current study. 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 to find the prevalence of SM.

Gender is considered as an important factor in SM patterns among young adults. The prevalence of SM was observed as high among females in our study when it is taken as a percentage. Because, the study group comprised majority of females, the generalization of this finding is controversial. However, a study done in Jimma, (G/Mariam A & Worku S, 2003), that identified females as the fundamental elements in the consumption of OTC drugs.

There is also a significant difference of SM practice among the degree programmes in our study. MLS students are practicing SM more frequently than others. Nursing students also have a reasonable prevalence of SM. This could be due to the compositional differences in drug-related subjects in different disciplines of Health Sciences. Among the three degree programmes least exposure to patient care and least pharmacology based subject content are belong to MLS students. Nursing students have reasonable hours of pharmacology based subject matters and their learning is mainly based on the clinical training which they may directly contact with patient care and medicines. Pharmacy students are more likely to have a deeper knowledge on medicines and hence practice less SM as compared to other health sciences students. It may strengthen them to make a self-diagnosis and self-prescribing in a rational way. In our study pharmacy students had the least prevalence in usage of SM. Another study done in Gondar (Abay SM and Amelo W, 2010) found that pharmacy students practiced SM more frequently than medical and other paramedical students.

In our study, the prevalence of SM was higher among the first year students and the trend decreased with the maturity. Abay SM and Amelo W (2010) indicated that, it increased when they mature which is opposite to our

study findings. Our findings could be due to the fact that, as the students' year of study increases, they take more practical oriented knowledge and hence their knowledge and understanding about drugs and diseases would increase that help them to make right selection of their medicines for SM for minor ailments.

In our study the most common reason for SM was to save time followed by past experience with same illness and illness is a minor ailment. Kayalvizhi S & Senapathi R (2010) reported that the most of students practiced SM as it was time saving, whereas in Punjab (Gupta V *et al.*, 2011) the most common reason for SM was for quick relief. Prior experience (39.10%) and mildness of the illness (37.50%) were also reported. The same reasons were reported in a similar study in Gondar (Abay SM and Amelo W, 2010). However, mildness of disease (58.0%) and previous experience (29.0%) were the two major reasons reported in the study conducted in Palestine (Sawalha A, 2007), "less costly" was the major reason reported by G/Mariam A & Worku S (2003).

Majority of the participants in our study had obtained the medications from pharmacies and lesser number had taken from their friends. Gutema *et al.* (2011) has also reported that 40.63%, 15.63% and 14.10% of the respondents obtained the drugs for SM from drug retail outlet, friends/relatives, and open markets, respectively. Headache was the most common reason for SM in our study. However a study done in India reported fever as the most common indication for SM (Kayalvizhi S & Senapathi R, 2010). However, in studies from Western (Banerjee I & Bhadury T, 2012) and Southern part of India (Bodiger S *et al.*, 2012), cough and cold was the most common symptom for SM. A study from Ethiopia (Abay SM, & Amelo W, 2010) reported fever as the most common symptom for SM.

Antipyretics were the most common class of drugs self-medicated by majority of the participants in our study. Similar observations were reported in studies from Kumar *et al.* (2013) and Bodiger S *et al.* (2012). However, studies from Iran (Sarahroodi S *et al.*, 2012) Mozambique (Lucus R *et al.*, 2007) and Pakistan (Zafar SN, 2008) reported that antibiotics as the most common class of medicine used as SM. Analgesics (non-narcotics) especially NSAIDs were the most common class of medications used as reported by Sawalha A (2007).

Previous prescription for the same illness was reported as the most common source of information about the drugs used for SM in few studies done in India (Kumar N *et al.*, (2013), Kayalvizhi S & Senapathi R, (2010), Verma RK, Mohan L & Pandey M, 2010).

In our study, all the students were aware that irrational antibiotic usage causes antibiotic resistance. However, only 66.1% were aware that antibiotics should be continued for prescribed period. The students' knowledge about possible adverse effects on some drugs was also assessed. Accordingly, majority had the awareness on side effects of vitamins, paracetamol and NSAIDs. This might be because almost all of them had general idea and perception on basics of those

medications may be due to the media exposure, following external pharmacy courses by most of the students, self-interest on pharmacology which leads to enhance knowledge. In a telephone based population

survey in USA was observed that 58% of the participants were not aware of the possible health danger associated with antibiotic use (Vanden Eng *et al.*, 2003).

Table 2 – Frequency distribution of knowledge on SM among the study sample (n=233)

Question	Number of correct answers (%)
There are drugs called Over the counter drugs and Prescription only drugs in Sri Lankan drug act	176 (75.5)
Use of antibiotics (eg:-Amoxicillin) cannot be discontinued just after symptoms are relieved	154 (66.1)
Inappropriate use of antibiotics will cause resistance to drugs	233 (100)
Antacids (eg:-Aludrox, Digien) should be chewed before swallowing to achieve a better effect	217 (93.1)
Overuse of Panadol/ Paracetamol will cause liver damage.	228 (97.9)
Over use of vitamins will cause negative effects to human body	135 (57.9)
Long term use of aspirin will cause gastric irritation and increase bleeding tendency.	202 (86.7)
Long-term use of painkillers will cause dependence	178 (76.4)
Taking medications with foods and drinks will interfere with effects of medicines.	189 (81.1)
Storing ointment or gel in the refrigerator could not extend the expiry date	60 (25.5)

Table 3 - Frequency distribution of attitudes on self-medication among the study sample (n=233)

Attitude statement	SA %	A %	NI %	D %	SD %
I believe Self-medication is a part of self-care	34 (14.6)	144 (61.8)	34 (14.6)	21 (9)	0 (0)
I am careful in taking medicines on my own	72 (31.3)	145 (62.2)	4 (1.7)	5 (2.1)	6 (2.6)
I am more concern about adverse effects of self-medication	53 (22.7)	129 (55.4)	29 (12.4)	2 (9.4)	0 (0)
I am confident enough in self-prescribing	4 (1.7)	112 (48.1)	41 (17.6)	60 (25.8)	16 (6.9)
I believe it is safer to take nonprescription drugs as self-medications	12 (5.2)	119 (51.1)	57 (24.5)	45 (19.3)	0 (0)
I believe it is safer to take prescription only drugs as self-medications	5 (2.1)	44 (18.9)	33 (14.3)	77 (33.0)	74 (31.8)
I believe reading of Product information leaflet is enough to have a clear idea to decide safe self-medication	0 (0)	38 (16.3)	21 (9.0)	134 (57.5)	40 (17.2)
I believe that having a drug store in our living places is appropriate, as it enhance the self-medication	28 (12.0)	113 (48.5)	39 (16.7)	41 (17.6)	41 (5.2)

(SA – Strongly agree, A – Agree, NI – No idea, D – Disagree, SD – Strongly disagree)

Table 4 – Association of demographic variables with prevalence, knowledge and attitude on SM (n=233)

Variable	Prevalence of SM (p value)	Level of knowledge (p value)	Type of attitude (p value)
Gender	0.85	0.22	0.83
Nationality	0.27	0.73	0.14
Degree programme	0.02	0.00	0.82
Academic year	0.57	0.30	0.70
Family member in health sector	0.84	0.35	0.19

In our study, majority had a higher level of knowledge followed by a moderate level of knowledge. Because SM is one component of self-care, more awareness about the responsible SM is needed to foster the students' attitudes towards SM practices. Kumar *N et al* (2013) showed that majority of the participants from their study; felt that SM was part of self-care which was higher than reported in studies from Ethiopia (Gutema GB, 2011) and Karachi (Safar SN *et al.*, 2008). In our study 61.8% had the same attitude. Collectively majority of the study participants had positive attitudes on SM although it has both advantages and disadvantages. Many studies reported positive attitudes towards SM practices. For

instance, 76.90% in Bahrain (James H *et al.*, 2006), 85% in India (Kayalvizhi S and Senapathi R, 2010) and 55.50% in Gondar (Abay S and Amelo W, 2010) had positive attitudes towards SM practices.

After their entry in to the degree programme, students' behavior has changed positively among the study participants of our study. Kumar *N et al* (2013) had reported that most of the participants from their study, wished to continue with SM or start SM after they entering in to the university which is concordant with our findings.

Almost all the participants of the current study are ready to encourage the SM among their families and friends as

a self-care. Study done by Kumar N *et al* (2013) also, had nearly one-third of participants who were ready to advice SM to their friends.

SM is an area where health authorities need to ensure that it is done in a responsible manner ensuring safe drugs are made available over the counter, consumers are given adequate information about use of drugs, and when to consult a doctor. In a number of developing countries including Sri Lanka, many drugs are dispensed over the counter without medical supervision. Also, SM provides a lower cost-alternative for people who cannot afford the cost of clinical services.

Even though SM is a useful tool to treat minor ailments, improper SM practice may lead to serious adverse drug reactions and possibly fatal consequences. It could delay accurate diagnosis and appropriate treatment, and could cause toxicity, side-effects, drug interaction and unnecessary expenditure (Arzi A *et al.*, 2010). Moreover, currently, there is a worldwide concern about the emergence of antibiotic resistant strains of micro-organisms which might have been highly augmented by SM (Arzi A *et al.*, 2010).

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. Also, the younger generation is heavily exposed to media and pharmaceutical advertisements.

In Sri Lanka University students are under stress with financial problems, curricular and extracurricular activities, tough examinations and time constraints. With the poor financial support and great workload, they cannot afford to consult a doctor and high costs of pharmaceutical preparations that are prescribed by the physicians even for minor ailments. They neglect to go to even university medical center though it is free of charge because of the time constraints. Considering these factors, most of the students tend to use SM while keeping a stock of medicine and they might share their medications with the colleagues.

As the facilitators and mentors, AHS academics have a major role to play within the context of assessing the students' awareness on SM and identify the knowledge deficiencies and misuse behaviors to plan effective interventions. Thus, possible interventions must be developed by both drug regulatory and health authorities to create awareness among students about the consequences of SM with drugs, especially during their foundation or orientation programmes highlighting the possible serious health outcomes. Also, pharmacists should be in positions to deliver valuable information on the advantages and disadvantages of SM as they are reported to have been the most widely preferred source by the consumers for nonprescription medicine information.

3. CONCLUSION

The present study reported the prevalence of SM as the 93.1%. Majority of 1st year and MLS undergraduates were used SM as a part of self-care. Antipyretics, vitamins, antibiotics and NSAIDs, were the most commonly reported types of medications consumed in SM and majority had obtained medicines from pharmacies. Headache, fever and pains were the three most commonly reported ailments for SM practices. The major reasons indicated for SM by respondents were to save time and prior experience of the illness while using the academic knowledge as the source of information. Most of the students in the study had a high and a moderate level of knowledge with positive attitudes. The degree programme was associated with the usage of SM and knowledge on SM. AHS undergraduates encourage SM as a one of the components of self-care. Thus, rise of awareness of the students on implications of medications was suggested by majority of the participants.

Recommendations include commencing such awareness programmes which needs to be started from the community with the young population in this target group on responsible medications use for SM to eventually improve the knowledge and attitudes towards the practices of SM. It is also recommended to include few lessons on same context in the foundation/ orientation programmes as the SM practice cannot be eradicated from the university subculture. The role of socio-economic status and its influence on practice of SM needs to be explored in future studies.

LIMITATIONS

As the most of the AHS undergraduates were Sinhalese and Females, ethnicity and gender differences of prevalence of SM cannot be generalized. To what extent the study is able to assess the knowledge and attitude of SM is somewhat debatable, because these results are obtained only with the given areas with the questionnaire.

Sometimes there may be variability in knowledge in other areas and there may be various types of attitudes. Also, this study focuses only the AHS undergraduates of University of Ruhuna and it is worthwhile to study the AHS undergraduates in different universities and find the geographical variations and finally generalize the finding.

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