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Case Report

SELF-MEDICATION BEHAVIOUR AMONG FEMALE STUDENTS AND MEDICATION STORAGE

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ABSTRACT

This research is to observe the prevalence, attitudes and characters of female students who store medicines and self-medicate. In this study, a cross-sectional survey was conducted and respondents were selected using cluster random sampling method. We collected data from women by administering a pre-piloted questionnaire. A descriptive analysis of the data was conducted using SPSS version 12. Researchers interviewed 240 students, with a mean age of 21.5 years and a standard deviation of 3.1 years, who reported keeping medicines in their rooms 46.62% of the time (n=224), and not consulting their doctors about stopping prescribed medications 35.50% (n=170). 88 percent of respondents (n=195) self-medicated. 29.06% of self-medicators stated they did so for their own knowledge of their condition and it's treatment. 14.4% indicated they did it to save time, and 8.5% said it was because the medication given by their provider did not work. Most people reported symptoms associated with otorhinolaryngology (11.05%), respiratory disease (9.8%), Gastrointestinal Tract (GIT) disease (9.05%) and headache/fever (8.4%). In terms of medicines used, analgesics & antipyretics (15.1%), ear, nose & throat medications (5.4%), vitamins & minerals (5.4%), GIT medications (4.25%), anti-infection medicines (3.65%) and herbal remedies (1.25%). It educated female students are more likely to store medicines and practice self-medication. Increasing awareness among students is imperative to ensure safe practice. For medicines not to be wasted, strict policies must be implemented regarding their unrestricted availability.

Key words: Self-Medicate, Spss Version, Characters.

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INTRODUCTION

Proper and effective benefits of essential medicines is frequently compromised by inappropriate use of medicines. In an age where pharmaceuticals are in greater supply and variety, consumers can easily access medicines, thus giving rise to misuse. If misused, it will pose a health risk to patients and cause money hardship to governments, decreasing the affordable price of medicine. [1, 2]. An individual who self-medicates obtains and consumes drugs on their own without consulting a physician to obtain a diagnosis, prescription, or supervision of a program. This include to get medicines without a prescription, exchanging medicines with relative or friend or using remaining medicine kept at residential area [3]. Many researches have shown that women under the age of 25 also students mostly are probable to use self-medication [4, 5].

It is possible to misuse medicines if you self-medicate. Sub-optimal prescribing practices such as insufficient dosing, not completed treatment course, and indiscriminate drug use contribute to the development and

spread of antimicrobial resistance, according to the WHO. Previously, university students in Karachi, Pakistan were found to use self-medication at 76%, in Turkey at 45%, in Croatia at 88%, and in Hong Kong at 94% [10]. Pharmaco-epidemiologists, health social scientists, and others have conducted studies on pharmaceutical practice over the last two decades. Clinical rationality of prescription practices (including excessive and irrational prescribing), self-medication including over-the-counter drug use for acute and chronic illness, poor compliance with prescriptions, and medicine storage were examined in these studies [11-14]. There are few existing interventions aimed at improving drug usage from a medical and consumer perspective after reviewing many studies.

Medicine can expire, be shared with friends, be taken for a different problem, or even become poisonous if one of these factors occurs. It is also possible for patients to die if pharmacists do not adequately explain what they are giving to patients at the time of consultation. This is the second factor, which could pose a serious risk to patients' lives. During 2002, the amount of patients with particular disease who came to the USM Health Center (which makes healthcare available to nearly 15,000 residents) increased by approximately 11% over 2001. For the treatment of various pharmacological cases, the predicted number of drugs in Malaysian Ringgit amounts to RM360, 606. 82 (USD 107005). A total of RM 70,931.16 (USD 21047) was spent on medicines by the Health Center and its pharmacy alone during the period from January 2001 to March 2003 [15]. In conclusion, the widespread use of drugs (drug storage and self-medication practices), if not controlled, will produce enormous drug wastage and pose health risks to the health system. An assessment of USM female students, through a cross-sectional survey, was conducted in order to identify students' attitudes and behavioural characteristics regarding drug use (medication storage and self-medication practices). USM researchers sought to find out how frequently female students in USM take self-medication, as well as the reasons behind this practice, in order to obtain baseline information.

METHODS

This descriptive, cross-sectional study was designed to examine female students' self-medication and medication storage behaviours. Various data collection methods were used, including face-to-face interviews and visits to the students' rooms. The Health Centre primarily provides health care services. There are two hours of operation each day: 8:30 AM to 5:30 PM and 7:10 PM to 9:10 PM.Besides, it provides healthcare services to students, employees, and dependents through private clinics and pharmacies that are affiliated with the university. Study participants were recruited between February and June of 2022. We selected 265 students based on a specific sample size equation.

$$\frac{Z^2 * (p) * (p-1)}{C^2}$$

Random sampling was conducted in two stages. In stage 1, we randomly selected the hostels and in stage 2, the same random sampling procedure was used to select female students from the particular hostel,picked up randomly from those.. A written consent was obtained from students after explaining the study's purpose. In case respondents needed assistance, questionnaires were filled out in the researcher's presence

Data collection

Participants completed an open-ended and closed-ended questionnaire which was pre-piloted. Among the topics covered in the questionnaire are demographic information, attitudes and behaviours of students toward self-medication, health condition and medical services were given to students, source of medicine information, reason for self-medication and how medications are stored. A further question asked the respondents about their medication storage habits as well as their experience with accidental poisoning. Pilot tests were conducted on 15 female students for testing the content and design of the questionnaire. The questionnaire was modified as needed as a result of the pilot tests.

Data analysis

Quantitative data were calculated using frequency, mean, standard deviation , median and cross-tabulation in the statistical package for Social Sciences. In addition, relative non-parametric statistics were utilized to produce relationships or differences between variables for skewed data. In order to determine whether there is a significant difference between the amount spent on studying and the ethnicity and years of study, Kruskal Wallis test was conducted. P-P plots were used to test the normality of the data. There was a high confidence interval of 95% and a statistical significance level of 0.05.

RESULTS

An overall response rate of 45.38% was achieved by 240 female students. There was a wide range of ages among respondents, ranging from 20 to 53. Students between the ages of 18 and 25 contributed predominantly to the sample (n=214; 44.5%). There was a mean age of 22.1 (SD=3.3). Most of respondents were Malay (54.7%), while the Chinese (30.8%) represented 30.8%. Students of other ethnicities included Arabs, Indonesians, Thais, Bangladeshis, and Pakistanis.

One fourth (118; 12.15%) of the 240 female respondents were from the first-year cohort, 11.75% (n=56) from the second-year cohort, 16.6% from the third year and 12.1% from the fourth year. There were also 1.3% from the PhD program and 0.2% who were not identified as undergraduates.

Students kept most medications in their rooms (n=224). The majority of respondents (n=90; 18.7%) reported that they cpmpletely got to know the symptoms or indications that made them to take up the stored medications. Meanwhile, 4.75% of respondents (n=41) were completely unaware of any of the symptoms that needed to be treated with the stored medications, while 22.85% (n=110) knew some of the symptoms and 8.4% (n=40) knew none. The results of the survey revealed 14.25% (n=69) always checked expiry dates before administering or ingesting drugs, while 26.9% (n=130) sometimes did. The number of people who don't check the expiration dates before using the product was only 3.45% (n=16). Three-fourths of respondents (n=158; 38.55%) said they kept medications in their rooms in case of an emergency (in their original prescribed amounts). A slightly higher percentage (11.45%, n=55) don't keep medication in the same way. According to table 1, female students stock a variety of medicines for emergency situations. With an estimated cost of RM8820., the whole amount of medicines got from Health Centre accounted for 35.7% (n=615).

When the female students were enquired the reason to stock this kind of medicine particularly, 15.05% said that they require 'pain killers' each month, 7.3% said that they require vitamins to study, 11% said that they comonly take these kind of medicines to treat disease and lastly 5.2% declared that they store all kind of medicine for future use. A study of storage methods and locations of the medications was also conducted. A little more than half of respondents (n=141; 29.35%) kept their medicines in cupboards, whereas 13.3% (n=64) kept them on wall shelves.

Besides drawers and refrigerators, other places where items were stored included bathrooms and cars. 88.6% of respondents (n=213) kept their medicines in their original packaging, and a very small percentage (n=5) didn't keep their original packaging. Students surveyed disposed of their expired medicines in the rubbish bin 36.6% (n=176) of the time, while 11.25% (n=54) saved their drugs to reuse if they were still good. Of the respondents, 45.85% (n=220) reported no cases of accidental drug poisoning. Nevertheless, 4.15% of the students (n=20) reported that they had become ill from drugs accidentally.

Female students were also assessed on their self-medication habits, with 40.45% reporting self-medication (n=194).

In clinic and pharmacy for minor ailments, 85.0% of people prefer over-the-counter medications or prescription only drugs. Over the counter remedies and prescription-only drugs are the most commonly purchased by students. The median amount they spend per semester is RM12.00, with the maximum amount being RM300.00.

According to the survey, 20 % (n=140) of the respondents paid between RM1 and RM50 for their OTC drugs while 30 % (n=146) paid more than RM 12,364.00. Financial resources were expended differently based on ethnicity (p=0.002) for purchasing over-the-counter medicines;. Furthermore, the time spent studying and the amount spent on financial resources were significantly different (p=0.03). Approximately half of the students purchased OTC medicines for between RM1 and RM50.

Seventy-seven percent of people (n=170) reported discontinuing their medications. According to the respondents, 17.05 % (n=82) discontinued taking the prescribed medications because they perceived it not to be effective. According to the respondents, 20.2% (n=49) cited side effects, and 8.9% (n=21) said they forgot the instructions as reasons for discontinuing. In all, more than half of respondents (n=144; 29.95%) said they had not seen their health conditions deteriorate as a result of their discontinuation of medication. Female students on the main campus also reported practicing self-medication in the following ways: 66.1% (n=159) repeat their medications when their symptoms recur. In a survey of respondents, 42.6% (n=52) said that they typically repeated their prescriptions if they experienced recurrences of disease symptoms. 6.05% repeated their medications twice, however. Three or more prescriptions were repeated by only 5.4% of respondents.

In order to determine whether respondents took leftover medicine from relatives or friends, we asked them if they had taken any of that medicine. Among the respondents, one third (n=81; 16.95%) indicated that they always did so, while 29.95% (n=144) indicated they sometimes did so. In terms of age groups, remaining medication taken from relative or friend was associated with a significant increase in consumption among female students between the ages of 18-23 (p=0.015). Additionally, it was found that this behaviour was importantly related with ethnicity (p=0.001), with Malay students showing a higher level of this behaviour.

Approximately 27.15 percent of respondents (n=130) admitted to sharing drugs with their friends and family members, while 18.9% (n=91)refused to do so. Students aged 18-23 shared medicines more frequently with their friends (p=0.037). Furthermore, it was found that Malay students were more likely to engage in this behaviour (p=0.023) than Chinese students. In addition, 11.05% (n=53) of respondents said that they usually bought medicines based on recommendations from friends and family, whereas 33.25% (n=160) indicated that they often bought medications based on recommendations from friends and family. Based on the results of table 2, we can tell what the most common reason are for female students to self-medicate. A majority of self-medication practitioners (n=139; 29 %) credited their knowledge of their ailment and its treatment for their practice.

According to the survey, 31.5% (n=151) of respondents responded that they usually use traditional medicine (herbals) to manage illnesses, where 8.1% (n=39)

responded that they sometimes did. Female students mentioned traditional herbal medicines for a variety of reasons in Table 3. According to an estimate of respondents' average expenditures on herbal medicines, 22.25% (n=107) surveyed spent between 1 and 10% of their pocket money on herbal medicines each year. Moreover, 6.95% of the respondents (n=33) spent between 11 and 20% of their money on herbal medicines. In terms of traditional herbal medicine use, age groups were significantly associated with its use (p = 0.033).

Self-medicating students did not have a significantly greater number of drugs (p=0.128) than did non-medicating students in table 4.

Over one fifth (8.4 %; 54 respondents) of respondents reported ENT disorders as the most common disease they experienced, followed by respiratory diseases (9.8%; 47 respondents). In addition to hypertension and diabetes, female students also reported epilepsy, urinary tract infections, and joint replacements.

Table 1: Extent of medicine storage (n=240)

Types of medicines stocked by female students for emergency purposes	N (%)
Analgesics & antipyretics	72 (15.1%)
ENT drugs	25 (5.4%)
Vitamins & minerals	25 (5.4%)
GIT drugs	20 (4.25 %)
Anti-infections	18 (3.6%)
Herbal medicine	9 (1.5%)
Respiratory system drugs	8 (1.5%)
Skin products	6 (1.15%)
Other*medicines	2 (0.3%)
No medicine stocked	55 (11.45%)
*Other (Cardiovascular drug, Genito-urinary drug & eye drops)	

Table 2: Female students' main reasons for self-medicating (n=240)

Reasons of self-medication practice	**N (%)**
What was the reason for practicing self-medication?	
Time saving	34 (7.2%)
Disease and treatment's Knowledge	139 (29 %)
Medicines not effective by the provider	20 (8.5%)

Table 3: Reasons of using herbal traditional medicine by female students (n=240)

Reasons for the use of herbal medicine	N (%)
What was the reason for using herbal medicine?	
Effective	70 (14.45%)
Safe & with fewer side effects	40 (8.4%)
I belief in traditional-herbal medicine	27 (5.6%)
Advice from friends and relatives	17 (3.5%)
Easy to obtain (availability)	16 (3.35%)
Cheaper	11 (2.3%)
Unsure as to the reason why	10 (2.0%)

Table 4: Comparing the students' behaviours of practising self-medication to the total number of drugs found (n=240)

Do you always practice self-medication? Totalnumber of drugs found		N**	Median	Mean (SD)	p value*
	Always	35	1.00	1.68 (1.52)	
	Sometimes	159	1.50	1.81 (1.24)	0.127
	Not at all	46	1.50	1.79 (1.76)	
	Total		1.5	1.74 (1.40)	
*Kruskal-Wallis test at alpha= 0.05; **N= number of students					

DISCUSSION

We note that our participants are well educated and, if self-medication is so prevalent in this group, it is likely to be more prevalent in the general population.

According to this study, most female students kept medicines in their bedrooms without knowing the indications for these drugs. In addition, more than half of the students checked the expiration date of the drugs before they consumed them. It is similar to the results obtained by Taiwan researchers. who observed that the most of college students in Taiwan surveyed had low satisfactory information and safe use of medication, which led to increase in health risks and a burden on the economy. In the study, analgesics & antipyretics were the most popular medicine types carried by students for emergency purpose. Others were ENT drugs, vitamins & minerals, GIT drugs, anti-infections, and herbal remedies.

Other people mentioned keeping whatever medicine they use for future reference, while some use this type of medicines for their ailment. Several others stated that they needed pain relief every month and vitamins for their studies.

Even though most female students keep their medication in its original packaging with the labels on it, only a handful of students stored the medications in other packs or combined medications from multiple packs into one container. This made it difficult to identify the drug type and count the tablets, especially in the case of accidental drug poisonings. Students also disposed of expired and unused medicines in garbage bins, according to the study. Children and pets may be at risk from this behaviour due to its effects on the environment and the risks related with medications. In the dump sites and among those exposed to these sites, this can pose a problem. Unfortunately, this problem is rarely taken seriously and is not taken as seriously as it should be a substantial majority (approximately 50%) of students asked dispensers in private clinics and community pharmacies for OTC medicines, while 43.0% (n=207) sometimes asked dispensers for them. Women tend to keep medicine for common illnesses, which may explain this. Due to less awareness about the uses and contraindications of OTC medicines, such purchases and retention may lead to OTC medicine misusing OTC medicines were typically prescribed for minor ailments as supplements or in combination with other medicines. Nutritional supplements were also included (e.g. Ginseng, Gingko biloba, Evening Prime Rose, Protein Powder, and Fish oil). Similarly, university students reported similar findings in Turkey. OTC medicines also included analgesics and fever medication (e.g. paracetamol and mefenamic acid), similarly to that reported among English university students, as well as some cough preparations and some skin products Some of these medicines were available in USM clinics but had to be purchased elsewhere. Analgesics such as paracetamol and aspirin have been shown to increase the risk of chronic kidney failure in case-control studies.

Approximately one third of students who discontinued their medications mentioned that they were ineffective, while approximately half reported side effects were to blame. Ineffectiveness of medications and debilitating side effects were two factors that led to discontinuation of medication, according to another group of authors. Many students said that discontinuing their medication did not worsen their health condition. In light of this, we suggest the remaining students check with their physicians if they experience health problems after discontinuing some drugs since extra information would increase patients' confidence in the drug and, therefore, improve compliance with it.

As a result of self-medication approaches, medications for identical symptom that may reoccur in the future are used again for the same symptoms. As antibiotics are misused, they are liable to develop antibiotic resistance, which may constitute a health hazard. According to this study, more than half of the students teke remaining medicines purchased by relatives or friends, while two thirds purchased medicines after receiving advice from family or friends. Almost two thirds purchased and used traditional medicines, while more than half shared them with other friends. The probability of girls sharing medicines increased with age and was more common among girls aged 15-18 years old than among boys (13.4%).

The majority of students who took self-medication told that they did so because they were aware about the symptoms and treatment of their disease. Only a small percentage said they cut down on time by self-medicating. In some ways, the findings are similar to those among first-year medical students of the Arabian Gulf University in Bahrain where 44.8% confirmed that they self-medicated, the majority of whom were female.

In the same way as other developing countries, female students use herbs for self-medication. The respondents believed in the effect of herbal medicine like modern allopathic medicines since they were born into a culture where herbal medicines were introduced to them from an early age. The medical shops sell herbal medicines easily. Some students who used traditional medicines reported that they used herbal medicines because of their efficacy, while 8.4% (n=40) said it was because of their safety and fewer side effects than other medications. Numerous researchers cite these reasons as the top reasons for using complementary alternative medicines (CAM). According to a study from the National University of Singapore, 62% of medical students believed herbal medicine to be effective while 26% believed it to be harmless.

About one third of Australian students reported using herbal medicine, and their top reasons were better results (34.5%), preferring other medicine over traditional

medicine (33.1%), and experiencing lesser side effects (32.1%). In this study, about half of the students who purchased herbal medicines spent anywhere from one to ten percent of their own money on them. The finding is not surprising since herbal medicine and alternative medicine are common sociocultural practices among Chinese, Malays and Indians in Malaysia. As well as misleading advertisements, promotions from drug promoters and people who sell vitamins and tonics for alternative medicine producers (e.g. Ginseng and Gingko biloba) was another factor contributing to self-medication with herbal medicine. There have been various research on the adverity and toxic effect of CAM that have been published, though this study did not directly connect these poisoning cases to herbal medicine, because herbs contain a variety of mostly unknown substances that can cause undesirable side effect or even poisoning.

CONCLUSIONS

It is common for female students to store unused medicines and to self-medicate. The correct storage method and condition was rarely noticed when medications were stocked, regardless of whether they were actually used. Among the drugs most frequently stored and used for self-medication, there were analgesics and antipyretics, ENT drugs, vitamins and minerals, GIT drugs, and anti-infections. Depending on the findings of the study, interventions may include medicine refund policies, awareness programs for university students, or other novel initiatives that might reduce storage and self-medication of medicines. Several policies should also be put in place by the university so that expired and spoiled medicines may be disposed of safely, since this can be harmful to the environment and to the health of students.

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