Pattern and Attitudes of Self Medication among Nursing Students in Alexandria

Rasha Abd El Hakim Abdou
Lecturer - Community Health Nursing department, Faculty of Nursing- Alexandria University

Abstract
Background: Self medication is a common practice worldwide and the irrational use of drugs is a cause of concern because of its serious implications. **Aim of the study:** was to assess pattern and attitudes of self medication among nursing students. **Subjects & methods: Research design:** An analytical design was used. **Setting:** Faculty of Nursing, Alexandria University. **Subjects:** 440 undergraduate nursing students. **Tool of data collection:** One tool was used for data collection namely "nursing students' pattern and attitudes of self medication structured interview questionnaire" to identify data related to students' socio-demographic characteristics, physical health status, health care services utilization as well as pattern of self medication. Additionally, nursing students' attitude towards self medication. **Results**: Findings of the present study revealed that the majority (82.3%) of the students were self medicated and more than one third (37%) of them had positive attitude towards self medication. Age, place of residence, presence of chronic diseases, availability and use of health services are determinants of self medication. **Conclusion:** The study concluded that self medication is prevalent problem among nursing students with multiple determinants such as students' gender, working status, place of residence, presence of chronic diseases, utilization and satisfaction of health services as well as attitude towards such practice. **Recommendations:** Educational campaigns are needed to raise the students' awareness towards the prevention and control of self-medication.

Keywords: Self-medication; Self-treatment; Nursing students, pattern and attitude

Introduction:

Feeling unwell and suffering from ailments is a very common human experience and human beings have an inherent tendency to use herbs, potions and medicines for treating themselves. Every day, people throughout the world act on their health; they practice self-care [1-3].

Self-care is what people do for themselves to establish and maintain health, and to prevent and deal with illness. It is a broad concept includes healthy living behaviors such as adequate physical exercise, proper nutrition, maintenance of well-being, and self medication [4, 5].

Self medication is defined as the selection and use of non-prescribed medicines by individuals of the basis of their initiatives to treat self-recognized illness or symptoms [6] . It includes obtaining and consuming medication without professional supervision regarding indication, dosage, and duration of treatment, resubmitting an old prescription to procure medication, sharing medications with others or utilizing medications that are already available in the residence [7, 8].

Self-medication may lead to unavoidable health problems attributed to the side effects of the medicines, drug dependence and tolerance, masking diagnosis of certain diseases and problems associated with over and under dosing [6, 9]. Moreover, currently, there is a worldwide concern about the emergence of antibiotics resistance strains of microorganisms which might have been highly augmented by self medication [10, 11].

On the other hand, if it is done appropriately, self medication can readily relieve acute medical problems, save time spent in waiting to see a physician, provide cheaper alternative for treating common illness, and make people more health conscious [7, 12].

Self medication is influenced by various factors, such as age, educational level, availability of drugs, exposure to advertisement and

legislation regulating dispensing and sale of drugs [13]. Geographical difficulties in accessing health care services and poor quality of health services may also be connected with self medication [14, 15]. Moreover, knowledge of drugs and their use are the main causes of self medication especially among medical and nursing students [1, 2].

Self medication is widely practiced phenomenon in both developed and developing countries as cited by the WHO in 2011 where its prevalence was 47.6% [16]. Recent studies revealed that self medication is commonly practiced by medical and nursing students with a prevalence rate ranged from 70% to 90% [2, 4].

Significance of study:

Nursing students are in a profession exposed them to knowledge about diseases and drugs. They are expected to handle several types of medications as well as they have easy access to drugs in their future practice, which all can favor self medication [2]. Furthermore, nursing students constitute a group of future health professionals who serve an important role in educating members of the community against self medication. It is therefore, important to determine to what extent they are also involved in this potentially harmful practice [4, 17]

There is a paucity of studies on self medication among nursing students. The present study was undertaken to assess the pattern and attitude of self-medication among nursing students.

Aim of the study:

The present study aimed to assess pattern and attitudes of self-medication among nursing students in Faculty of Nursing, Alexandria University.

Research Questions:

1. What is the pattern of self-medication among the nursing students in the Faculty of Nursing, Alexandria University?
2. What are the attitudes towards self medication among nursing students in Faculty of Nursing, Alexandria University?
3. What are the self medication related factors among nursing students in Faculty of Nursing, Alexandria University?

Subjects and methods:

Research design:

An analytical design was used.

Study setting:

The study was conducted in the Faculty of Nursing, Alexandria University.

Study subjects:

The following steps were followed to select the study subjects:

- The sample size was estimated by Epi info 7 statistical program using the following parameters; prevalence of self medication 50%, confidence level 95% and 5% maximum error. The minimum sample size estimated was 400 students. Accounting for a non-response error of 10%, final sample size was calculated to be 440 students.
- By using the equal allocation method, a random sample of 110 undergraduate nursing students was selected from each grade during the academic year 2016-2017. They accounted for 440 undergraduate nursing students.

Tools of data collection:

Structure Interview questionnaire was used for data collection namely "Nursing Students' Pattern and Attitudes of Self Medication". It composed of four parts**:**

Part (I): Socio demographic data about the students and their parents such as age, birth order, level of education of student's parents, occupation, and marital status. Additionally, family social leveling which was assessed using Fahmy and El-Sherbini Scale [18].

Part (II): Physical health status data: It included data about the health status of the students, presence of

health problems, utilization of health services and possession of home pharmacy.

Part (III): Patterns of self medication: It included data about students' reactions to minor illness, frequency and indications of self medication, type for drug used, reasons for such practices and the source of drug. As well as the students' perspectives of self medication's advantages and disadvantages.

Part (IV):

Attitudes towards self-medication was assessed by a self-scale which was developed by the researcher. It is consisted of 22 items using 3 points likert scale ranging from (0) meaning disagree, (1) meaning neutral and (2) meaning agree . The total score ranges from 0 to 44 which classified as follows; a score of (0- 14) was considered as negative attitude, a score of (15-29) was neutral and a score of (30- 44) was positive attitude.

Content validity and reliability:

The tool was tested for content validity by jury of five experts in the field of Community Health Nursing. It was assessed for clarity, relevance, comprehensiveness, applicability, and understanding. Their suggestions and recommendations were taken into consideration; additionally the reliability coefficient of the fourth part of the tool (attitude towards self-medication) by Cronbach's alpha was 0.87.

Field work:

The average time to complete the interview schedule ranged from 30- 40 minutes. Work continued for five days per week. Data were collected over a period of two months (September - October 2016).

Pilot study:

Before performing the main study, a pilot study was carried out on a sample of 44 nursing students not included in the study subjects in order to ascertain the relevance, clarity and applicability of the tools, test wording of the questions and estimate the time required for the interview. Based on the obtained results, the necessary modifications were done.

Administrative and ethical considerations:

Approval of the responsible authority was obtained from the Faculty of Nursing after explanation of the purpose of the study. Also informed written consents were obtained from the students after brief explanation of the purpose and nature of the research.

The anonymity and confidentiality of responses, voluntary participation and right to refuse to participate in the study were emphasized to students.

Statistical analysis:

Data collected were analyzed by computer using the statistical package for social sciences (SPSS) software version 20. Mean and standard deviation, and percentages were used for data summarization. Chi square test was used for testing significant differences and relations between variables. Logistic regression analysis was used to identify the risk factors associated with self medication. Significant difference was considered if $p \leq 0.05$.

Results:

Table (1): shows the socio demographic characteristics of the nursing students. The table reveals that more than two thirds (68.4%) of the students were females, while their age ranges from 18 to 24 years with a mean of 20.68 ± 1.52 years. More than half of the students were living in urban areas and with their parents (54.5% and 53.4% respectively). Additionally, 12% of the students were working beside their education and 13.6% of them of lower social class.

Table (2): portrays that less one fifth (18.4%) of the students had chronic diseases, while, only 3.4% of them were using health insurance services regularly and the vast majority (93.9%) of them were unsatisfied with such services. Furthermore, less than three quarters

(71.1%) of the students reported availability of health services nearby their residence, while the majority (94.1%) of them mentioned presence of pharmacies. Moreover, more than one third (39.5%) of them owned home pharmacy. The same table reveals that 31.4% of the students consulted physicians in case of minor illness, while the majority (82.3%) of them practiced self-medication.

Figure (1): reveals the causes of self medication. More than two fifths of the students mentioned knowledge about drugs and convenient drugs (40.3% and 41.7% respectively), while, previous illness experience was stated by 49.4% of them and less than two thirds (65.2%) reported minor illness.

Table (3): presents the pattern of self medication. It was noticed that the majority (82.3%) of the students were self medicated mainly because of headache and body aches as mentioned by 96.7% of them, followed by common cold and flu (93.1%). Analgesics were the most common drugs reported by 90.3% of the students, while antibiotics were stated by more than half (57.7%) of them. Furthermore, 67.1% of the students were self medicated four times and more in the last 6 months.

The same table shows that old prescriptions were the main source of information about drugs used in self medication (70.0%), followed by academic knowledge (54.1%). Furthermore, around two thirds (65.7%) of the students got the medications from pharmacies without prescription, or with old prescription (50.6%), while media's advertisements constituted 7.7% of them. Additionally, 37% of the students experienced drugs' side effects mainly allergy (52.2%). Lastly, less than half (45.0%) of the students recommended self medication to others.

Figure (2): reveals that more than half (57.5%) of the students were aware of the drugs' correct dose, while 64.4% of them were aware of its side effects.

Figure (3): portrays advantages of self-medication. Being useful in mild illness was the common advantage reported by less than three quarters (74.0%) of the students, followed by time saving (40.0%). While, quick relief of minor illness was stated by 32.3% of them.

Figure (4): shows disadvantages of self medication. Drug reaction was mentioned by (65.5%) of the students, followed by drug allergy (41.4%). On the other hand, masking of the entire disease was reported by 23.2% of them.

Figure (5): portrays that around one third (37.0%) of the students had positive attitude towards self medication compared to 1.8% of them who had negative attitude.

Table (4): shows the correlation analysis between practice of self medication and attitude toward it. A significant correlation was found between them (P= 0.052), which indicates that those students with positive attitude towards self medication, tend to practiced it more than those with negative attitude.

Table (5): reveals the relation between the students' socio demographic characteristics and practice of self medication. The table shows that self medication was more experienced among those students in the seventh semester (86.4%) as well as among male (84.9%). It was noticed that self medication was higher among those students aged 22 years and more (78.4%) with a statistically significant relation between them (X^2 = 1.752, P= 0.042). Furthermore, self medication was more prevalent among those students lived in rural areas and those lived away from their families during the study years (85.0% and 86.3% respectively), with significant relations between self medication and place of residence, and residence during study (X^2 = 1.871, P= 0.017 and X^2 = 4.357, P= 0.036). Additionally, self medication was more encountered among those students who work beside education as well as among

those students with lower social class (84.9% and 83.3% respectively).

Table (6): illustrates the relation between students' health status, utilization of health services and practice of self medication. It was found that self medication was less encountered among those students with chronic diseases (80.2%) with a statistically significant relation between self medication and presence of chronic health problems (X^2 = 1.279, P= 0.053). Furthermore, a significant relation was noticed between regular use of insurance health services and self medication (X^2 = 32.923, P= 0.000) where, it was less prevalent (26.7%) among those students who reported regular use of insurance health services. Moreover, self medication was more prevalent among those students who were unsatisfied with health services (82.8%).

The same table reveals that self medication was more encountered among those students who reported unavailability of nearby health services with a statistically significant relation between them (X^2 = 8.382, P= 0.004). On the other hand, self medication was less noticed among those students who mentioned availability of nearby pharmacies with a statistically significant relation between them (X^2 = 1.542, P= 0.022). Lastly, self medication was more prevalent among those students who possessed home pharmacy (85.1%).

Table (7): portrays logistic regression analysis of the factors associated with practicing self medication among nursing students. The table shows that students age (P = 0.047), residence place (P = 0.011), living with parents (P = 0.003), presence of chronic health problems (P = 0.054), work beside education (P = 0.043), availability of nearby health services (P = 0.007), availability of nearby pharmacies (P = 0.016), and attitude towards self medication (P = 0.020) were associated with practice of self medication.

Discussion:

When facing an illness, a person may choose hospital based treatment or self treatment which includes all activities that the individual undertakes with the intention of enhancing health, preventing and limiting illness Thakolkaran et al and Hassali et al [1&3] This was reflected in the current study where less than one third of the nursing students consulted physicians in case of minor illness, while, the majority of them were self medicated (table 3). In agreement, Sama etal [19] and Ali et al [20] studies in India who found that the majority of nursing students practiced self medication.

Self medication is motivated by a complex set of factors such as local legislations, unrestricted selling and propaganda of pharmaceutical products in the media Enato et al [5]. One of the main reasons for self medication is the financial burden of consulting a physician especially among poor population. It is anticipated that the limited financial resources will hinder any person from seeking medical help, getting the expensive treatment and costly disease management activities or performing follow up. So, they may accept more cheap methods of health care services including self medication Emanual et al [21]. The current study indicates that less than one third of the students used self medication because of financial constraints (figure 1), as less than one fifth of them were of low social class (table 1). Furthermore, the present study reveals that self medication was highly prevalent among those students with lower social level (table 5) and less than two fifths of the students stated that self medication is an economical method for treating minor illness which is considered one of its advantages (figure 3). These results come in line with those of Moraes et al study among high school students in Brazil [22], Khan etal study in Pakistan[23] who found that poverty is a significant determinant of self medication.

Knowledge about drugs helps to identify the proper use of each drug, it doses, frequency, adverse reactions and precaution on use. It makes the individual feel confident to make self diagnosis and treatment Ocan et al [14]. In the present study around two fifths of the students indulged in self medication owing to their pharmaceutical knowledge (figure 1). Additionally, self medication was higher among senior and older nursing students (table 5), which could be attributed to the level of knowledge and experiences the students gained throughout their nursing study, that make them more capable of taking health related decisions such as self medication without additional exams. In agreement, Sontakke et al [24] and Pandya et al [25] studies in India who found that self medication practice increased with age and academic year of the students.

Experience has been said to be the best teacher. So, it is not surprising that previous experience with similar symptoms or illnesses was a common reason influencing self medication. The present study reveals that around half of the nursing students stated that previous illness experience was the main cause for practicing self medication (figure 1). These findings could explain why half of the students used old prescriptions as a source for their information about drugs to be used in self medication (table 3). Similar findings were reported by Ethigiator et al study in Nigeria [26] and El Nimr et al study in Alexandria, Eygpt [27] who found that old prescriptions were the main source of information for drugs used in self medication.

Ease of access to drugs from pharmacies without prescriptions could be a facilitating factor to self medication especially with the presence of inadequate regulations of drug distribution and sale Sallam et al [28]. This was reflected in the present study as more than two fifths of the students declared that convenient drugs was a cause for self medication (figure 1). Furthermore, less than two thirds of them purchased medicinal products without prescriptions (table 3). The same results were reported by Pandya et al study in India [25] and Sallam et al study in Alexandria, Egypt [28] who found that ease of access to medicinal products was a main cause of self medication. These findings shed the light on the lax medical regulations which have resulted in the proliferation of counter free drugs and high rate of self medication.

When the health problem is self limited, self-care can be used. The criteria for considering a health problem as minor illness include having limited duration and being perceived as non-threating to the individual such as cold and flu, heart burn and infrequent or difficulty in passing stool Gutema et al [17]. This could explain the results of the current study where less than two thirds of the students expressed that minor illness is a cause for self medication (figure 1). Furthermore, it was reflected in the health conditions where self medication was used such as headache, body aches, common cold and flu (table 3). These findings are consistent with those of Gallardo etal study in Kingdom Saudi Arabia [2] and Ali et al study in India [20] where headache, backache, cough, common cold were the main conditions for self medication's practice.

Similar to several studies on self medication, analgesics, cough and flu preparations, and antipyretics were the most common drugs used with self medication (table 3) Ali S and Sontakke et al studies in India. [20, 24]

It is concerning that self medication with antibiotics was mentioned by more than half of the students (table 3). It is a cause of concern because it may contribute to the emergence of antimicrobial drug resistance Kumari et al and Ullah et al studies in Pakistan [4,6]. This high percentage of antibiotics consumption through self medication without prescription or with old ones indicated again lack of implementing proper

regulation over the medicines sale which needs more enforcement of strict legislations and severe penalties for defaulters. These finding come in line with Sontakke et al study in India [24] and Gutema [10] who found that more than two fifths of the students used antibiotics without prescription for the treatment of infection.

Access to health services and satisfaction with its quality have been emerged as important predictor of self medication. The current study reveals that self medication was more prevalent among those students who were dissatisfied with the quality of health insurance services and who used it on irregular basis. The clients' satisfaction is the most important indicator on the quality and effectiveness of services provided by any health institution. A satisfied client is more likely to develop an effective relationship with the care providers, leading to continuity of care and ultimately better health outcomes (Al-Qatari et al and Binsalih et al studies in Kingdom of Saudi Arabia [29, 30]. So, when the health insurance services fall outside the range of quality, the students manifested with dissatisfaction and irregular use of services, which attributed to self medication. Similar findings were reported by El Nimr et al study in Alexandria , Egypt [27] who found that regular use of health care services was a determinant of self medication.

In the same context, the current study found that self medication was more encountered among those students resident in rural areas. These findings could be attributed to the problems of rural areas as there are fewer health care facilities in rural areas compared to cities, so, there is a higher possibility that students practice self medication. Also, lower social class is characteristics to rural areas, which might explain the lack of funds for treatment in health clinics if present. Additionally, these could offer an explanation to the current study findings where self medication was more prevalent among those students who reported unavailability of nearby health services. These finding are in accordance with Moraes et al [22] who found that rural Brazilian population had higher chances for self medication in the light of poor quality health services.

Duties of the pharmacist have been changed over the past two decades with self medication increasing worldwide. Pharmacists can help in assessing the symptoms of minor illness and explaining how to use the medications without any request of charge for prescription or their advice (Jain et al) [31]. In the current study, more than half of the nursing students consulted pharmacists in case of minor illness (table 3), and more than two fifths of them declared that pharmacists were their main source of information about drugs to be used in self medications (table 4). These findings reflect the central role a pharmacy plays as an alternative source of medical care, and indicate the extent to which the nursing students confide the competency of the pharmacy staff as services providers. In agreement, Gallardo etal study in Kingdom Saudi Arabia [2] and Ali et al study in India [20] who found that pharmacists were among the main source of advice for self medication. Additionally, it could explain why self medication was more prevalent among students who reported availability of nearby pharmacies in their residence places (table 6). Similar findings were mentioned by Emanual et al [21] and El Nimr et al study in Alexandria , Egypt [27] who found that a strong correlation between presence of nearby health services including pharmacies and practice of self medication.

Self medication is associated with the availability of drugs and stocks of medicines leftover in the home Thakolkaran et al [1]. The present study reveals that self medication was more encountered among students who reported possession of home pharmacy. In the same line, the results of Moreas etal [22] who found a strong

relation between presence of home pharmacy and practice of self medication among Brazilain Students.

Evidence drawn from several studies reveals that females are self medicated higher than males Gallardo et al study in Kingdom Saudi Arabia [(2),] but the results of the present study indicated that self medication was more practiced by male students which support the results of El-Ezz and Ez-Elarab study in Egypt [(32)] and Pandya etal study in India [(25).] These findings could be attributed to that females may look for professional medical advice more often than do males, thus, may have less personal stake involved in the choice of self medication.

Employment is an important risk factor for self medication. The students who worked beside their education had a greater susceptibility to health problems than their peers, who do not work, such as sleep problems and work related fatigue, which may cause more frequent medicines use in them. Also, work beside education enhances the students' knowledge and experiences regarding different diseases and its management. Additionally, through work, access to medicinal products is more convenient. In agreement, Moraes etal [(22)] reported a significant relation between Brazilian adolescents' employment and self medication.

Having a chronic illness requires continuing medical care and ongoing patient self-management education and support to prevent acute complications and to reduce the risk of long-term complications (WHO) [(33).] This was portrayed in the current study where self medication was less encountered among those students with chronic diseases. In agreement, Garrido etal study in Spain [(34)] and El Nimr etal study in Alexandria , Egypt [(27)] who found that absence of chronic diseases was significantly associated with self medication.

It is well known that behaviors usually reflect established beliefs and attitudes. Ideally, positive attitude manifest well-adjusted behaviors (Kumari et al) [(4)].The same picture was portrayed in the current study where, a significant correlation was found between attitude towards self medication and its practice. The same findings were reported by Pandya etal [(25)] and Raut etal [(35)] studies in India who found that those students with positive attitudes towards self medication, practiced it more frequently than those with negative attitudes.

Self medication is a widely used practice among nursing students mainly in response to common minor illness Thakolkaran et al [(1).] It has some positive aspects, which were portrays through the current study as the students mentioned time and cost saving, being useful in mild illness, and providing quick relief (figure 3). Similar advantages were reported by several researchers (Gallardo et al study in Kingdom Saudi Arabia, Enato et al, and Lawan et al studies in Nigeria [(2,5,8)] .

Even though self medication is a useful tool to treat minor ailments, improper self medication practice may lead to serious adverse drug reactions and possibly fatal consequences (Kumar et al) [(7)]. In the same context, the current study reveals that drug allergy, reactions, abuse and masking of illness were the disadvantages of self medication mentioned by the nursing students (figure 4). The same findings were reported by Sontakke etal study in India [(24)] and Ehigiator etal study in Nigeria [(26)]. Additionally, these disadvantages were illustrated in the present study as more than one third of the students experienced adverse reactions upon self medication including allergy, nausea, vomiting, and dizziness. These findings support the findings of Pandya etal study in India [(25)].

Conclusion:

Based upon the findings of the current study, it could be concluded that self medication is a prevalent problem among nursing students as

the majority of the students were self medicated in case of minor illness. Self medication has multiple and interrelated determinants where a significant association between self medication and students' gender, working status, place of residence, presence of chronic health problems as well as utilization and satisfaction of health services were found. Moreover, attitude towards self medication has significant impact on students' practice of it.

Recommendations:

On the basis of the current study findings, the following recommendations are suggested:

- Raise awareness of the nursing students on the concept of self medication through carrying out intensive education and comprehensive awareness campaign to advocate for reduction in the prevalence of self-medication among them.
- Enhance the quality of health services to ensure ease and affordable access to it especially in rural areas.

- Enforce of rules and regulations by which pharmacies are guided and supposed to operate in regard to the selling of medications through frequent supervisory visits by the concerned authorities.

Table (1): Socio demographic characteristics of the nursing students: (N=440)

Students characteristics	Total	
	No	%
Sex		
- Male	139	31.6
- Female	301	68.4
Age (years)		
- 18	111	25.2
- 20-	235	53.4
- 22+	94	21.4
X ± SD	20.68 ±1.52	
Family residence		
- Urban	240	54.5
- Rural	200	45.5
Student residence during study		
- With the family	235	53.4
- Away from the family	205	46.6
Work beside education		
- Yes	53	12.0
- No	387	88.0
Social level		
- Low	60	13.6
- Middle	236	53.6
- High	144	32.7

Table 2: Health status and health service utilization of the nursing students: (N=440)

*Multiple answers were allowed

Items	Total	
	No	%
Presence of chronic health problems		
- Yes	81	18.4
- No	359	81.6
Use of health insurance services		
- Yes	15	3.4
- No	425	96.6
Satisfaction with health insurance services		
- Satisfied	27	6.1
- Unsatisfied	413	93.9
Availability of health services nearby residence		
- Yes	313	71.1
- No	127	28.9
Availability of pharmacies nearby residence		
- Yes	414	94.1
- No	26	5.9
Availability of home pharmacy		
- Yes	174	39.5
- No	266	60.5
What to do in minor illness*		
- Consult physician	138	31.4
- Consult pharmacist	230	52.3
- Self medication	362	82.3
- Use home remedies	76	17.3

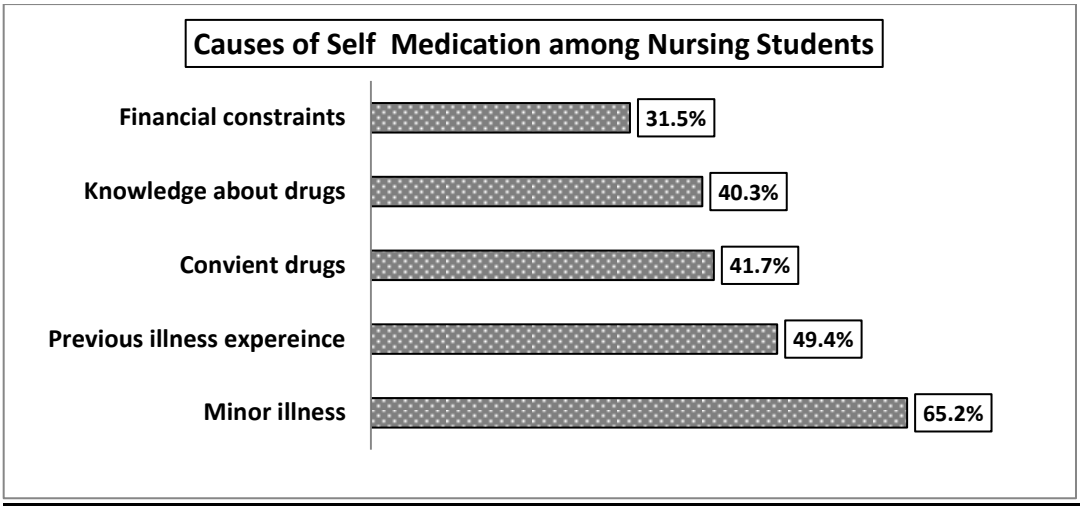

Figure I: The causes of self medication as stated by the nursing students

Table 3: The pattern of self medication among the nursing students: (N=440)

Items	Total	
	No	**%**
Practice of self medication		
- Yes	362	82.3
- No	78	17.7
Frequency of self medication (in the last 6 months)	**N = 362**	
- Once	37	10.2
- Twice	43	11.9
- Three times	39	10.8
- Four times and more	243	67.1
Indications for self medication*		
- Headache & body aches	350	96.7
- Common cold & flu	337	93.1
- Fever	288	79.6
- Gastric problems (heartburn, vomiting)	229	63.3
- Menstrual pain	191	52.8
- Diarrhea	83	22.9
- Allergy	32	8.8
Types of drugs used in self medication*		
- Analgesics	327	90.3
- Cough and common cold preparations	234	64.6
- Antipyretics	221	61.0
- Antibiotics	209	57.7
- Antacids	109	30.1
- Antiemetic	86	23.8
- Antidiarrheal	64	17.7
- Nutritional supplements	61	16.9
- Herbal remedies	59	16.3
- Anti-inflammatory and corticosteroids preparation	58	16.0
Source of information about drugs used in self medication*		
- Old prescription	253	70.0
- Academic knowledge	195	54.1
- Pharmacists	175	48.3
- Internet / media	22	6.1

Table 3: Continued

Items	Total	
	No	%
Source of medicines used for self medication*	**N = 362**	
- Pharmacy without prescription	238	65.7
- Pharmacy with old prescription	183	50.6
- Home pharmacy (left over medicines)	54	14.9
- Media's advertisement	28	7.7
Experience of side effects after self medication		
- Yes	134	37.0
- No	228	63.0
Side effects experienced*	**N= 134**	
- Allergy	70	52.2
- Heartburn	27	20.1
- Hypotension	19	14.2
- Nausea/ vomiting	12	9.0
- Dizziness	8	6.0
Recommend self medication to others	**N= 440**	
- Yes	198	45.0
- No	242	55.0

*Multiple answers were allowed

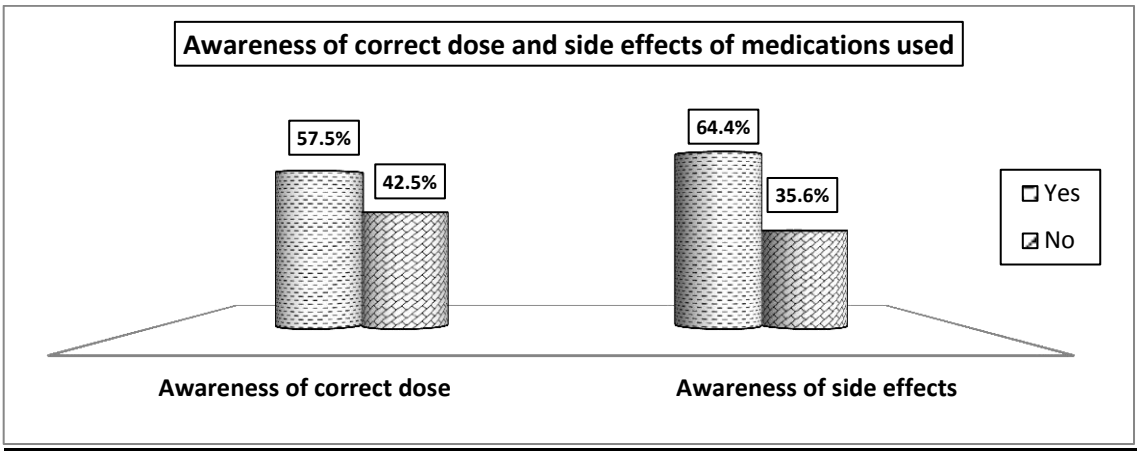

Figure 2: Awareness of correct dose and side effects of drug used by nursing students

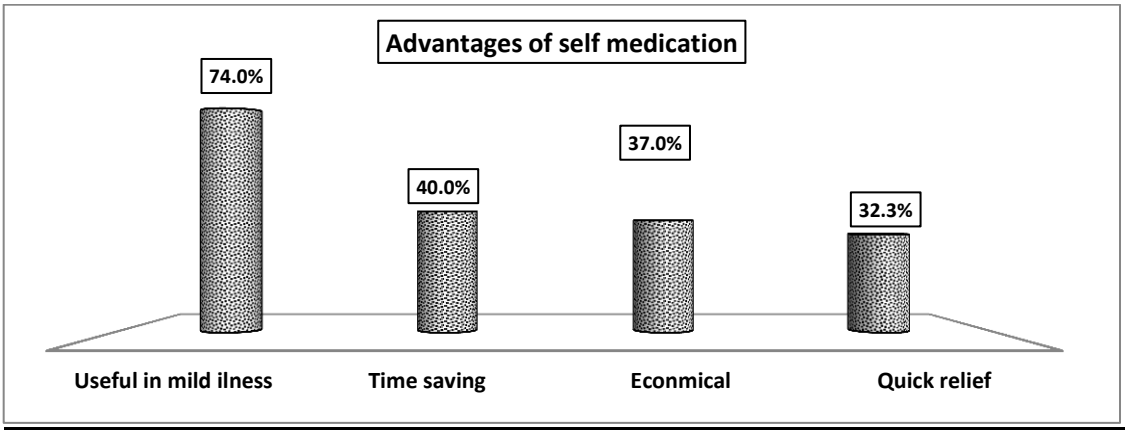

Figure 3: Advantages of self medication as mentioned by nursing students

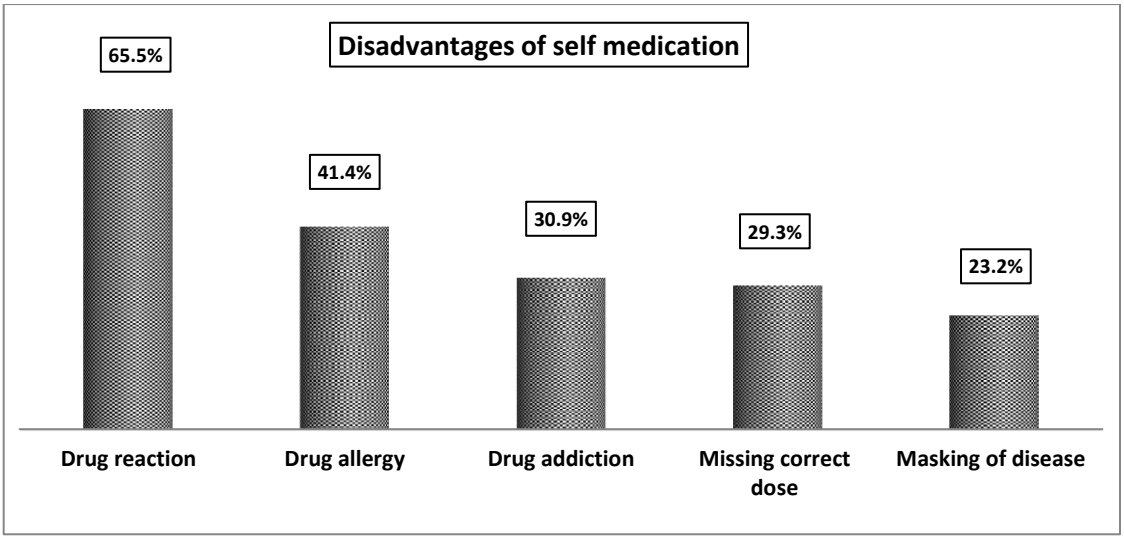

Figure 4: Disadvantages of self medication as mentioned by nursing students

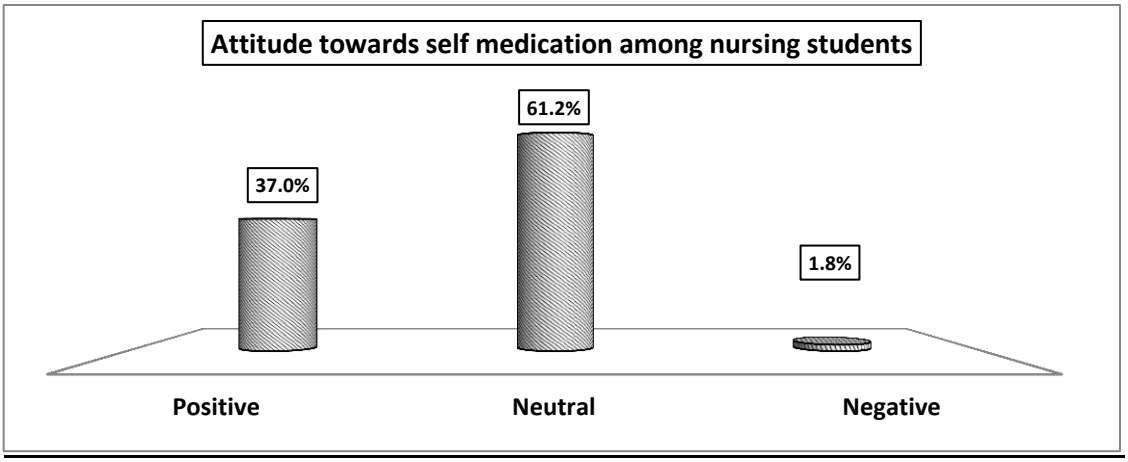

Figure 5 : Attitude towards self medication among nursing students

Table 4: Correlation between practicing self medication and the attitude toward it:

Statistical Test Pearson's r	Correlation Coefficient	Significance
Attitude towards self medication	0.278	0.052*

* Significant at P≤0.05

Table 5: The relation between the nursing students' self medication and their socio demographic characteristics: (N=440)

Items	Self medication				Total	Test of Significance
	Yes (N=362)		No (N= 78)			
	No.	%	No.	%		
Academic semester						
- First	84	76.4	26	23.6	110	X^2= 4.042
- Third	91	82.7	19	17.3	110	P= 0.256
- Fifth	92	83.6	18	16.4	110	
- Seventh	95	86.4	15	13.6	110	
Sex						
- Male	118	84.9	21	15.1	139	X^2= 0.956
- Female	244	81.1	57	18.9	301	P= 0.328
Age (years)						
- 18-	87	78.4	24	21.6	111	X^2= 1.752
- 20-	195	83.0	40	17.0	235	P= 0.042**
- 22+	80	85.1	14	14.9	9	
Place of residence						
- Urban	192	80.0	48	20.0	240	X^2= 1.871
- Rural	170	85.0	30	15.0	200	P= 0.017**
Student residence during study						
- With the family	185	78.7	50	21.3	235	X^2= 4.357
- Away from the family	177	86.3	28	13.7	205	P= 0.036**
Work beside education						
- Yes	45	84.9	8	15.1	53	X^2= 0.286
- No	317	81.9	70	18.1	387	P= 0.593
Family social level						
- Low	50	83.3	10	16.7	60	X^2= 0.435
- Middle	196	83.1	40	16.9	236	P= 0.804
- High	116	80.6	28	19.4	144	

* Significant at P≤0.05

Table 6: The relation between the nursing students' self medication and their Physical health status and utilization of health services: (N=440)

Items	Self medication				Total	Test of Significance
	Yes (N= 362)		No (N= 78)			
	No.	%	No.	%		
Presence of chronic health problems						
- Yes	65	80.2	16	19.8	81	X^2= 1.279
- No	297	82.7	62	17.2	359	P= 0.053**
Regular use of health insurance services						
- Yes	4	26.7	11	73.3	15	X^2= 32.923
- No	358	84.2	67	15.8	425	P= 0.000**
Satisfaction with health insurance services						
- Yes	20	74.1	7	25.9	27	X^2= 1.326
- No	342	82.8	71	17.2	413	P= 0.249
Availability of health services nearby residence						
- Yes	247	78.9	66	21.1	313	X^2= 8.382
- No	115	90.6	12	9.4	127	P= 0.004**
Availability of pharmacies nearby residence						
- Yes	342	82.6	72	17.4	414	X^2= 1.542
- No	20	76.9	6	23.1	26	P= 0.022**

* Significant at P≤0.05

Table 6: Continued

Items	Self medication				Total	Test of Significance
	Yes (N= 362)		No (N= 78)			
	No.	%	No.	%		
Availability of home pharmacy						
- Yes	148	85.1	26	14.9	174	X^2= 1.531
- No	214	80.5	52	19.5	266	P= 0.216

Table 7: Logistic regression analysis of the factors associated with practicing self-medication among the nursing students:

Characteristics	B	S.E.	Wald	P
Sex (male/ female)	0.172	0.241	2.523	0.068
Age (less than 20 years/ more than 20 years)	-0.752	0.380	3.935	0.047*
Academic semester (junior / senior)	0.734	0.319	0.737	0.538
Residence place (urban/ rural)	1.139	0.699	2.657	0.011*
Live with parents (yes/no)	1.424	0.488	8.527	0.003*
Health problems (yes/ no)	0.564	0.306	3.395	0.054*
Low social level (yes/ no)	-0.457	0.531	0.740	0.390
Work beside education (yes/ no)	-1.285	0.461	1.383	0.043*
Availability of nearby health services (yes/ no)	0.030	0.344	0.931	0.007*
Availability of nearby pharmacies (yes/ no)	0.903	0.647	1.947	0.016*
Attitude toward self medication (positive/ negative)	1.821	0.505	4.524	0.020*
Constant	7.376	4.219	3.057	0.080
Model X^2 = 393.288, P < 0.0001	Cox & Snell R^2=.421		**Significant at P = 0.05	

References:

1. Thakolkaran N, Bhat N, Ullal N. Self Medication Pattern among Medical Students in South India. Australasian Meidal Journal 2012; 5 (4): 217-20.
2. Gallardo C, Kamel E. Prevalence of Self Medication Practice among Nursing Students in Jazan University, Kingdom of Saudi Arabia. IOSR Journal of Nursing and Health Science 2016; 5 (1):11-6.
3. Hassali M, Shafie A, Tombyappa J. P alaian S, Hariraj V. Self Medication Practices among Adult population Attending Community Pharmacies in Malaysia: An Exploratory Study. International Journal of Clinical Pharmacy 2011; 33: 794-9.
4. Kumari R, Kumar K, Bahl R, Gupta R. Study of knowledge and Practices of Self Medication among Medical Students at Jammu. Journal of Medical Sciences 2012; 15 (2):141-4.
5. Enato E, Sounyo A, Einarson T. Medication Utilization and Illness Management Study in Nigeria. The Annals of Pharmacotherapy 2011; 45:924-30.
6. Ullah H, Khan S, Ali S, Karim S, Baseer A, Chohan O, Hassan S, Khan K. Evaluation of Self Medication amongst University Students in Abbotta Bad, Pakistan: Prevalence, Attitude and Causes. Acta Poloniae Pharmaceutical Drug Research 2013; 70 (5): 919-22.
7. Kumar N, Kanchan T, Unnikrishnan B, Mithra P, Kulkarni V, Papanna M, Holla R, Uppal S. Perceptions and Practices of Self Medication among Medical Students in Coastal South India. PLOS ONE 2013; 8 (8): 1-5.
8. Lawan U, Abubakar I, Jibo A, Rufai A. Pattern, Awareness and Perceptions of Health Hazards Associated with Self Medication among Adult Residents of Kano Metropolis Northwestern Nigeria. Indian Journal Community Medicine 2013; 38 (3):144-51.
9. Shehnaz S, Khan N, Sreedharan T, Issa K, Arifulla M. Self Medication and Related Health Compliants among Expatriate High School Students in The United Arab Emirates. Pharmacy Practice 2013; 11(4):211-8.
10. Zhao Y, Ma S. Observations on the Prevalence, Characteristics and Effects of Self Medication. Frontiers in Public Health 2016; 4 (4):1-4.
11. Yousef M, Al Bakri A, Bustanjr Y, Wazaify M. Self Medication Patterns in Amman, Jordan. Pharmacological World Science 2008; 30:24-30.
12. Sarahroodi S, Jamshid A, Sawalha A, Mikaili P, Safaeian L. Pattern of Self Medication with Analgesics among Iranian University Students in Central Iran. Journal of Family and Community Medicine 2012; 19 (2): 125-9.
13. Ocan m, Bwanga F, Bbosa G, Bagenda D, Waako P, Okeng J, Obua C. Patterns and Predictors of Self Medication in Northern Uganda. PLOS ONE 2014; 9 (3): 1-7.
14. Ahmad A, Patel I, Mohanta G, Balkrishnan R. Evaluation of Self Medication Practices in Rural Area of Town Sahaswan at North India. Annals of Medical Health Sciences Research 2014; 4 (2): 73-8.
15. Selvara K, Kumar S, Ramalingam A. Prevalence of Self Medication Practices and its Associated Factors in Urban Puducherry , India. Perspectives in Clinical Research 2014; 5 (1):32-6.
16. World Health Organization (WHO). Guidelines for the Regulatory Assessment of Medicinal Products for Use in Self Medication. WHO, 2000. Available from: http://www.who.int/medicinedocs/ en/. Accessed on (13 Feb. 2016).
17. Gutema G, Gadisa D, Abebe Z, Berhe D, Berhe A, Hodera M, Solomon G, et al. Self Medication Practices among Health Sciences Students: The Case of Mekelle University. Journal of Applied Pharmaceutical Science 2011; 1 (10):183-9.
18. Fahmy S, El-Sherbini AF. Determining simple parameters for social classifications for health research (1983). Bulletin of the High Institute of Public Health: 2005.
19. Sama S, Mahesh V, Muninarayana C, Anil N. Study of Self Medication Patterns among Medical and Nursing Students in Deemed Medical University. International Journal of Basic and Applied Medical Sciences 2015; 5 (1):280-4.
20. Ali S, Sharma S, Ahmed T, Sharm R, Jaiswal M, Chaurasia R. Evaluation of Self Medication amongst Nursing

Students of Baster Region: A Questionnaire Based Study. International Journal of Pharmacological Research 2015; 5 (6): 145-9.
21. Emanual A, Daniel E, Achema G, Afoi B. Self Medication Practice among Undergraduate Nursing Students of University of Jos, Nigeria. Nigerian Journal of Pharmaceutical Science 2011; 10 (2):22-6.
22. Moraes A, Delaporte T, Fernandes C, Falcao M. Factors Associated with Medicine Use and Self Medication are Different in Adolescents. CLINICS 2011; 66 (7):1149-55.
23. Khan H, Maheen S, Abbas A, Mohamood A, Sarfraz R, Ashraf Z, Khalil M, et al. Determinants of Increasing Trends in Self Medication in a Pakistani Community. Tropical Journal of Pharmaceutical Research 2014; 13 (3):437-43.
24. Sontakke S, Bajait C, Pimpalkhute S, Jaiswal K, Jaiswal S. Comparative Study of Evaluation of Self Medication Practices in First and Third Year Medical Students. International Journal of Biological Medical Research 2011; 2 (2):561-4.
25. Pandya R, Jhaveri K, Vyas F, Patel V. Prevalence, Pattern and Perceptions of Self Medication in Medical Students. International Journal of Basic and Clinical Pharmacology 2013; 2 (3): 275-80.
26. Ehigiator O, Azodo C, Ehizele A, Ezeja E, Ehigiator L.Self Medication Practices among Dental , Midwifery and Nursing Students. European Journal of General Dentistry 2013; 2(1):54-7.
27. El- Nimr N, Wahdan I, Wahdan A, Kotb R. Self Medication with Drugs and Complementary and Alternative Medicines in Alexandria, Egypt: Prevalence, Patterns and Determinants. Eastern Mediterranean Health Journal 2015; 21 (4):256-65.
28. Sallam S, Khallafallah N, Ibrahim N, Okasha A. Pharmaco-epidemiological study of self-medication in adults attending pharmacies in Alexandria, Egypt. Eastern Mediterranean Health Journal 2009; 15(3):683–91.
29. Al-Qatari G, Haran D. Determinants of Satisfaction with Primary Health Care Settings and Services among Patients Visiting PHC Centers in Qateef, Eastern Saudi Arabia. Middle East Journal of Family Medicine 2008; 6 (1):3-7.
30. Binsalih S, Waness A, Tamim H, Harakati M, Al- Sayyari A. Inpatients' Care Experience and Satisfaction Study. Journal of Family and Community Medicine 2011; 18 (3):111-7.
31. Jain S, Malvi R, Kumar J. Concept of Self Medication: A Review. International Journal of Pharmaceutical and Biological Achieves 2011; 2 (3):831-6.
32. El-Ezz N, Ez- Elarab H. Knowledge, Attitude and Practice of Medical Students towards Self Medication at Ain Shams University, Egypt. Journal of Preventive Medicine and Hygiene 2011; 52:196-200.
33. World Health Organization (WHO). Non communicable diseases. WHO, 2015. Available from: http://www.who.int/topics/noncommunicable_diseases/en/. Accessed on (13 Feb. 2015).
34. Garrido C, Garcia J, Barrera V, Migeul G. Predictive Factors of Self Medicated Drug Use among the Spanish Adult Population. Pharmaco-epidemiological Drug Safety 2008; 17 (2):193-9.
35. Rout P, Vamsi D, Rao B. Evaluation of the Knowledge, Attitude and Practice of Self Medication among Second Year B.C.s Nursing Students. Journal of Drug Delivery and Therapeutics 2014; 4 (3): 150-3.