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Self-Medication among Undergraduate Pharmacy Students at the University of Benghazi- Libya

Lina Salama [1], Elzahra S. Buzariba [2]

[1,2] *Department of Pharmaceutics, Faculty of Pharmacy, University of Benghazi, Benghazi, Libya*

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الملخص

يرتبط التداوي الذاتي الغير مسؤول بالعديد من المخاطر المحتملة مثل مقاومة مضادات الميكروبات، والتفاعلات الدوائية الضارة، والارتهان بالمخدرات، ومعاناة المرضى لفترات طويلة، وإهدار الموارد. ويبلغ عن هذه الممارسة بشكل شائع بين طلاب الجامعات .أجريت هذه الدراسة لتحديد أنماط التداوي الذاتي بين طلاب كلية الصيدلة في جامعة بنغازي بليبيا . أجري مسح مقطعي من خلال استبيان ذاتي في كلية الصيدلة بجامعة بنغازي، ليبيا على مدى ثلاثة أشهر. سُئل الطلاب عن أنماط العلاج الذاتي في الأشهر الـــ 12 الماضية التي سبقت الدراسة. طرحت أسئلة على المشاركين تتعلق بالعديد من النقاط، مثل الأعراض التي تحفز على التداوي الذاتي، تصنيفات الأدوية التي يتم إعطاؤها ذاتياً، وأسباب الانغماس في الممارسة ومصادر المشورة فيما يتعلق بالتداوي الذاتي. وجد أن انتشار العلاج الذاتي بين المشاركين في الدراسة بلغ 87.9٪. وكان الصداع والبرد والسعال والحمى هي الأعراض الأكثر شيوعًا للعلاج الذاتي. كانت الفئات الرئيسة من الأدوية ذاتية الإعطاء هي المسكنات ومستحضرات البرد والسعال ومضادات الحرارة. كشفت الدراسة أيضاً أن معظم المشاركين مارسوا العلاج الذاتي لأنهم اعتقدوا أن مرضهم كان طفيفاً وأن الغالبية تحصلوا على معلومات الأدوية اللازمة من الصيادلة. كشفت الدراسة أن العلاج الذاتي يمارس على نطاق واسع بين أفراد الدراسة. وتشمل التوصيات المستقبلية زيادة كفاءة برامج التوعية فضلا عن التشديد على تطبيق لوائح صرف الأدوية.

الكلمات المفتاحية: التداوي الذاتي، صيدلة، ليبيا، طلبة.

Abstract

Irresponsible self-medication is associated with many potential risks such as antimicrobial resistance, adverse drug reactions, drug dependence, prolonged patient suffering and waste of resources. This practice is commonly reported among university students. This study was undertaken to determine the patterns of self-medication among undergraduate pharmacy students at the University of Benghazi, Libya. A cross-sectional survey via a self-administered questionnaire was carried out at the Faculty of Pharmacy at the University of Benghazi, Libya over a period of three months. Students were asked about their patterns of self-medication in the last 12 months preceding the study. The participants were asked questions related to several areas, such as symptoms that provoked self-medication, classes of self-administered medications, reasons for indulging in the practice and sources of advice regarding self-medication. The prevalence of self-medication in the study's population was found to be at 87.9%. Headache, cold, cough and fever were the most commonly self- medicated symptoms. The major classes of self-administered medications were analgesics, cold and cough preparations and antipyretics. The study also revealed that most participants indulged in self-medication because they believed their illness was minor and the majority obtained the necessary medication information from pharmacists. The study revealed that self-medication is widely practised among the study population. Future recommendations include more efficient education programmes as well as stricter applications of the regulations of dispensing medication.

Keywords: self-medication, pharmacy, Libya, students.

1. INTRODUCTION

Self-medication is defined as the use of medicinal products to treat self-diagnosed symptoms or disorders. It might also involve the continued or occasional use of a medication prescribed by a physician for recurring or chronic symptoms or diseases [1]. This practice is not confined to the use of over the counter (OTC) medications, which are dispensed without a prescription, but also includes the use of prescription-only medications (POM) such as antibiotics [2,3].

*Correspondence:

Lina Salama

Lina.Salama@uob.edu.ly

The patterns of self-medication vary from one population to another and in developing countries, for example, the prevalence is estimated to range from 12.7% to 95% [4]. Seam et al [5] linked the increase in self-medication activities to a number of different reasons such as the free accessibility of OTC drugs in the local market, insufficient medical facilities, lack of time to visit a physician, long distance between hospitals and clinics and places of residence, high costs of medical consultations, mildness of illness and finally, the absence of strict drug regulatory policies. Nowadays, the practice of self-medication is increasingly becoming a part of self-care [2,6,7]. Moreover, responsible self-medication has been encouraged by the World Health Organization (WHO) for preventing and treating minor diseases at an affordable cost [1,8]. However, inappropriate self-medication has been linked with several potential risks such as antimicrobial resistance, adverse drug reactions, drug

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dependence, prolonged patient suffering and waste of resources [8].

It has been frequently reported that self-medication is commonly practised by university students [3]. Moreover, several studies have revealed that the medical knowledge of students influences their self-medication patterns [9,10]. A meta-analysis of 89 studies on university students reported an overall self-medication prevalence of 70.1% with a higher rate in medical students (97.2%) compared to non-medical students (44.7%) [11]. According to Alshogran et al [1], medical students tend to implement their knowledge of drugs and diseases into practice, making them more likely to self-medicate. Understanding the patterns of self-medication among pharmacy undergraduates is especially significant as they are future health practitioners and educationalists with easy access to medication. Additionally, the malpractice of pharmacists could exploit the patients' potential to self-medicate, especially in countries where strong prescription legislations are not applied. In Libya, only one study had previously assessed the practice of self-medication among university students but it had focused exclusively on antibiotic use [12]. Therefore, the aim of this study was to evaluate the self-medication practices with all types of drugs among the undergraduate pharmacy students of the University of Benghazi.

2. METHOD

2.1 Study design and setting

A cross-sectional survey, using a self-administered questionnaire, was conducted for a period of three months (January 2021 to March 2021) at the Faculty of Pharmacy, University of Benghazi, Libya. It is the only public university in the city that offers a pharmacy program and the second oldest in Libya with approximately 700 students in the four professional years of the pharmacy program.

2.2 Study participants and eligibility criteria

Students of both genders and all ages, with varying academic levels and various nationalities from only the Faculty of Pharmacy at the University of Benghazi, were randomly approached for this study. Students who refused to participate or declined to give consent were excluded from the study.

2.3 Sample size

Assuming a confidence level of 95%, a margin of error of 5% and an expected self-medication prevalence rate of 50%, the sample size was determined to be 249. However, in order to compensate for any incomplete responses, the sample size was increased to 300.

2.4 Study tool and data collection

The data was collected using a self-administered questionnaire and only after obtaining the students' consent. The questionnaire was adapted from a number of similar studies previously conducted in other countries [5, 13, 14]. It was initially designed in English and later translated into Arabic. The data collector was present during the entire time of questionnaire administration in case of any needed clarification and the patterns of self-medication in the last 12 months preceding the study were noted.

The questionnaire was divided into two main domains. The first domain dealt with the demographic details of the participants such as gender, age, nationality and academic year. The second domain was concerned with the practice of self-medication and included questions related to the symptoms prompting self-medication, types of medicines used, reasons for partaking in the practice and sources of information about self- medication.

2.5 Statistical analysis

The collected data was entered and statistically analyzed using the Statistical Package for Social Sciences (SPSS) version 20. Data was summarized as frequencies and percentages. The Chi-square test was used to measure the association between the demographic characteristics and the prevalence of self-medication practice. Results were considered statistically significant when $p < 0.05$.

2.6 Ethical considerations

The study was formally approved by the administration of the Faculty of Pharmacy, University of Benghazi. To obtain the participants' consent, a detailed explanation of the aim of the study was given prior to data collection. They were also informed that the participation is voluntary and were assured that their responses would remain confidential and anonymous. No personal identifiers were included in the questionnaire.

3. RESULTS

3.1 Demographic information

Of the 300 approached students, 290 consented and completely filled the questionnaire, giving a response rate of 96.6%. The majority of participants were females (213, 73.4%) and Libyan (274, 94.5%). Students from the first and second year were the largest group of respondents (81, 27.9%), followed by the fourth year (69, 23.8%) and the third year students (59, 20.3%), respectively. Most of the participants were aged between 22- 25 years (224, 77.2%) while an approximately equal number of students were from the age groups 18- 21 years and 26- 30 years. Table (1) represents the demographic data of the study participants.

Table 1: Demographic characteristics of the study participants

Factor	Frequency (%)
Gender	
Male	77 (26.6%)
Female	213 (73.4%)
Age group (years)	
18- 21	35 (12.1%)
22- 25	224 (77.2%)
26- 30	31 (10.7%)
Nationality	
Libyan	274 (94.5%)
Non- Libyan	16 (5.5%)
Year of study	
1st	81 (27.9%)
2nd	81 (27.9%)
3rd	59 (20.3%)
4th	69 (23.8%)

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3.2 The practice of self-medication

3.2.1 Prevalence of self-medication

Most of the participants reported practicing some form of self-medication in the past year (255, 87.9%). However, there was no significant association between the prevalence of self-medication and gender (P= 0.269), age group (P= 0.419), nationality (P= 0.462) or academic year (P= 0.580).

3.2.2 Indications for self-medication

As illustrated in Table (2), various symptoms provoked self-medication among students, but of those headache was by far the most reported symptom (192, 75.3%), followed by cold and cough (150, 58.8%). Fever was also a common symptom as approximately one-third of the participants reported it.

Table 2: Conditions treated by self-medication

Indication	Frequency (%)	Indication	Frequency (%)
Headache	192 (75.3%)	Acne/ skin problems	27 (10.6%)
Fever	82 (32.2%)	Anxiety	7 (2.7%)
Cold and cough	150 (58.8%)	Insomnia	24 (9.4%)
Stomachache	46 (18%)	Fatigue	25 (9.8%)
Diarrhoea	15 (5.9%)	Injury	16 (6.3%)
Constipation	20 (7.8%)	Pain	31 (12.2%)
Heartburn	40 (15.7%)	Others	15 (5.9%)
Allergy	21 (8.2%)		

3.2.3 Drug classes used for self-medication

Among the different classes of drugs used for self-medication, analgesics headed the list (190, 74.5%) followed by cold and cough preparations (172, 67.5%), and antipyretics (98, 38.4%), respectively. Sedatives, however, were the least used drug category (3, 1.2%). Other indications for self-medication are shown in Table (3).

Table 3: Drug categories used for self-medication

Medication	Frequency (%)	Medication	Frequency (%)
Analgesics	190 (74.5%)	Antibiotics	69 (27.1%)
Antipyretics	98 (38.4%)	Sedatives	3 (1.2%)
Cold and cough preparations	172 (67.5%)	Hypnotics	14 (5.5%)
Antidiarrheals	11 (4.3%)	Nutritional supplements	86 (33.7%)
Laxatives	18 (7.1%)	Cosmetic products	21 (8.2%)
Antacids	34 (13.3%)	Herbs	38 (14.9%)
Anti-allergic drugs	14 (5.5%)	Others	5 (2%)

3.2.4 Reasons for self-medication

The primary reason that influenced the respondents toward using self-medication was their belief that the medical condition was minor (188, 73.7%). Another major portion of students (105, 41.2%) believed that they have sufficient pharmacological information about the medication they are taking (Table 4).

Table 4: Reasons for using self-medication

Reason	Frequency (%)
Minor illness	188 (73.7%)
Previous experience	87 (34.1%)
Cost-effectiveness	5 (2%)
Quick relief	47 (18.4%)
Emergency use	15 (5.9%)
Time-saving	38 (14.9%)
Sufficient pharmacological knowledge	105 (41.2%)
Others	3 (1.2%)

3.2.5 Sources of information about self-medication

Among all students, the most predominant source for obtaining information regarding self-medication was pharmacists (134, 52.5%) and academic knowledge (127, 49.8%). Other sources of information are illustrated in Table (5).

Table (5): Information sources for self-medication

Source	Frequency (%)
Academic knowledge	127 (49.8%)
Relatives	49 (19.2%)
Friends	14 (5.5%)
Pharmacist	134 (52.5%)
Internet/ media	77 (30.2%)
Old prescription for the same illness	46 (18%)
Others	6 (2.4%)

4. DISCUSSION

Self-medication is unlike any other practice of self-care. It involves the use of drugs, which when incorrectly used, have the potential to be harmful. Hence, pharmacists have a crucial role in this matter [8]. This practice is a common issue among health-

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care students and can seriously impact their future professional decisions [15]. Although self-medication among university students has been evaluated in many countries, there is a paucity of research from Libya in this regard. The current study aimed to explore the patterns of self-medication among undergraduate pharmacy students at one of the main universities in Libya.

In this study, 87.9% of students reported using some sort of self-medication in the previous year, which was similar to reports from the United Arab Emirates [3] and Bangladesh [5]. Other studies [9,10,14], however, revealed higher prevalence rates of self-medication whereas others [13,16] showed much lower figures. The high proportion of self- medicators observed in this study might be explained by the good level of medical and pharmaceutical knowledge they have received during their studies. Additionally, the easy accessibility to medications during their training in health centres and the frequent use of medications make them prone to self-medicate more than other university students [11]. Although there were no statistical associations ($P > 0.05$) between the prevalence of self-medication with any of the demographic variables studied, other studies have shown an association with gender, age, nationality [11] and academic year [13,17].

As mentioned previously, headache, cold and cough, and fever were the most commonly self-medicated symptoms in this study. This finding was analogous to the results of other studies carried out by Zafar et al in Pakistan [18] and Alshahrani et al in Saudi Arabia [14]. Meanwhile, other less frequently reported conditions in this study, such as diarrhoea, were more common in other countries such as South India at 23% [19], West Bengal at 25.47% [17] and Bangladesh at 47.60% [5].

In agreement with a previous study [20], the most common classes of drugs used by students to self-medicate in this study were analgesics, cold and cough preparations and antipyretics. These medications are normally regarded as risk-free; however, their irrational use may cause serious adverse reactions, which in turn could add to the health problem and further increase the possibility of self-administration of medications [21]. Irrational use of analgesics, for instance, may lead to adverse effects on kidney function, various gastrointestinal complications, hepatic injury and risk of cardiovascular events [22]. In addition, more than one-quarter of the study respondents self-medicated with antibiotics and this alarming result resembles the previous research findings of Auta et al in Nigeria [23]. Anyhow, our observation was comparatively low in comparison to a local study done by Ghaieth et al in 2015 [12]. and other studies conducted previously in Egypt [16] and South India [15]. Easy accessibility of antibiotics from community pharmacies without a valid prescription in Libya, as in many other developing countries [12,14], could explain the high prevalence of self-medication with antibiotics observed in this study. Using antibiotics irrationally to self-medicate worsens the global problem of antibiotic resistance and can lead not only to increasing health care costs but also to higher morbidity and mortality rates.

It is generally expected that self-medication would be highly practised in Libya since adequate medical services from public hospitals and other free health care facilities are seriously lacking. Additionally, the high cost of professional medical care, provided only in the private health sector, coupled with the malpractice of some pharmacists means people in Libya can easily purchase any drug, even POMs, from community pharmacies. However, in this study, the most common reason reported by participants to indulge in self-medication was the mildness of the disease, hence they did not consider the condition worth visiting a doctor. This finding was in line with previous literature reported from the United Arab Emirates [3], Palestine [10], South India [15] and Egypt [24]. In contrast, saving time was the top reason in other studies conducted in Pakistan [7] and Saudi Arabia [14]. Well-practiced self-medication cannot only relieve acute pain, but it can reduce treatment costs, save time and be more convenient [9]. However, when irresponsibly practiced, it could mask signs and symptoms of serious diseases that require quick medical intervention and professional care [6]. Moreover, it could increase the risks of drug abuse and misuse and adverse drug reactions [2].

Consistent with other studies [2,24], the participants of this research relied mostly on pharmacists to obtain information about drugs to self-medicate. On the contrary, only 8% of self-medicated students in a Pakistani study got the necessary information from pharmacists while the majority relied on media [7]. In other studies, however, students mainly used their academic knowledge to self-medicate [5,13] which in our study was listed as the second major source of information.

5. CONCLUSION

The findings of this study indicate that self-medication is highly practiced among undergraduate Pharmacy students at the University of Benghazi. It also highlights a concerning level of self-medication with antibiotics. As pharmacy students are the future pharmacists with an easy access to medications, this group should be educated more efficiently about the different aspects of self-medication, how to implement it responsibly and most importantly, to be aware of its potential health risks. Additionally, health authorities in Libya must apply strict control and regulations over pharmacies especially as regards supplying prescription-only drugs, such as antibiotics, without prescriptions. Further research investigating the practice of self-medication from other pharmacy and medical colleges across Libya is needed as well as studies exploring the role of community pharmacists in contributing to such practices nowadays.

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استبيان بشأن استعمال الأدوية من غير وصفة طبية/ بدون استشارة طبيب
لدي طلبة كلية الصيدلة - جامعة بنغازي

1-الجنس: O ذكر O أنثي

2-العمر: O 18- 21 سنه O 22- 25 سنة O 26- 30 سنه

3-الجنسية: O ليبي O غير ليبي

4-السنة الدراسية: O أولي O ثانية O ثالثة O رابعة

5 -خلال السنة الماضية، هل تناولت أي دواء من غير وصفة طبية/ بدون زيارة طبيب:

O نعم O لا

لو كانت الإجابة نعم أجب عن باقي الأسئلة:

6 **-ما هو العرض الصحي الذي تناولت من أجله دواء من غير وصفة طبية/ بدون زيارة طبيب: (يمكن اختيار أكثر من إجابة واحدة)**

O صداع O حرارة O برد/ كحة O مغص/ الم معوي O إسهال O إمساك

O حموضة O حساسية O حب شباب/ مشاكل جلدية O قلق O أرق O تعب عام

O جرح/ إصابة رياضية O الم (من أي نوع) O غير ذلك

7- ما هو الدواء الذي تناولته من غير وصفة طبية/ بدون زيارة طبيب: (يمكن اختيار أكثر من إجابة واحدة)

O مسكن ألم O خافض للحرارة O دواء للبرد/ كحة O دواء للإسهال O دواء للإمساك

O دواء للحموضة O دواء للحساسية O مضاد حيوي O مهدئ O منوم

O فيتامينات ومكملات غذائية O مستحضرات لعلاج حب الشباب أو أي مشاكل جلدية O أعشاب O غير ذلك

8- **ما هو سبب تناولك دواء من غير وصفة طبية/ بدون زيارة طبيب: (يمكن اختيار أكثر من إجابة واحدة)**

O العرض الصحي/ المرض الذي أشكوا منه بسيط ولا يستدعي زيارة طبيب

O تعرضت لهذا المرض الصحي/ المرض سابقاً ولدي دراية بكيفية التعامل معه

O ليس لدي المال الكافي لزيارة الطبيب

O أريد التخلص من المرض الصحي/ المرض بشكل سريع

O المرض/ المرض الصحي الذي اشتكيت منه كان يستوجب العلاج بشكل طارئ

O ليس لدي الوقت الكافي لزيارة الطبيب

O لدي معلومات دوائية كافية بشأن الدواء الذي تناولته

O أسباب اخري

9- ما هو مصدر معلوماتك الدوائية عند استعمال دواء من غير وصفة طبية/ بدون زيارة طبيب: (يمكن اختيار أكثر من إجابة واحدة)

O الدراسة / الكتب العلمية O الأهل والأقارب O الأصدقاء O الصيدلي

O الإنترنت والتلفزيون O لدي وصفة قديمة لنفس المرض/ المرض الصحي O غير ذلك

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