Original Research

Self-Medication Practice and Risk Factors for Self-Medication among university students in Beni Mellal

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SUMMARY

Self-medication is defined as taking medications without the physician’s prescription. It is a worldwide public health problem, especially in countries with limited resources. Although self-medication can reduce waiting time and save money, it may carry some potential risks: antibiotic resistance or inappropriate management with subsequent complication. A limited number of self-medication studies have been conducted in Morocco.

To estimate the prevalence of self-medication practices among university students in Beni Mellal and to identify the factors associated with self-medication.

An institution-based cross-sectional study was employed from March 1\textsuperscript{st} 2017 to April 13\textsuperscript{th} 2017. 476 university students were interviewed using a questionnaire including sociodemographic scale and self-medication knowledge and behavior. Data was analyzed using descriptive and analytic statistical methods.

Frequency of self-medication among the study sample has reached 62%. 26.07\% of the participants reported that the first reason behind using self-medication was lack of money. Meanwhile, the most prevalent conditions that make them use these medications by themselves were cough and common cold.
(32.51%) and headache (38.7%). The most frequent self-administered drugs were analgesics (38.7%) followed by cough suppressants (32.51%). Most (95.4%) of the drugs were purchased from community pharmacies as a source of drugs for self-medication.

Our study shows that self-medication is widely practiced among University students of Sultan Moulay Slimane University. In this situation, faculties should create awareness and educate their students regarding advantages and disadvantages of self-medication.

1. Introduction
Use of medications for treating themselves, has remained as a common inherent tendency of humans since the initiation of great civilizations. People, belonging to different tribes/civilizations, have practiced selfcare measures to maintain their own health through Self-Medication (Subashini & Udayanga, 2020).

According to the World Health Organization’s (WHO) definition, self-medication is the use of drugs to treat self-diagnosed disorders or symptoms, or the intermittent or continued use of a prescribed drug for chronic or recurrent diseases or symptoms (Torres, et al., 2019).

Self-medication can take many forms: classic self-medication when the patient goes to the pharmacy without a medical prescription, Secondary self-medication is using an old medical prescription several times without seeing the doctor again and self-medication with the agreement and under the doctor's regular control (Wael, et al., 2020, Torres, et al., 2019).

In several studies it has been found that inappropriate self-medication causes wastage of resources, increases resistance of human pathogen resistance to antibiotics and generally causes serious health hazards such as adverse drug reactions, drug toxicities, prolonged suffering and drug dependence (Wael, et al., 2020).

Increasing rates of antibiotic resistance has become the most serious issue arising due to inappropriate use of antibiotics in self-medication (Pavydë, et al., 2015).

According to WHO, sub-optimal prescribing practices such as inadequate dosing, incomplete treatment courses and indiscriminate drug use arising due to self-medication have contributed to the emergence and spread of antimicrobial resistance and emergence of multi-drug resistant (WHO, 2001). Therefore, absurd use of antibiotics and other medicines could directly lead to wastage of medical resources, while challenging the safe and efficacious use of medicines (Morgan, et al., 2011).

Factors influencing frequency of self-medication in the previous studies are age, educational level, family attitudes, advertising of drug manufacturers, legislation regulating dispensing a sale of drugs, previous experiences with the symptoms or disease, significance attributed to the disease and home-kept prescription drugs (Klemenc-Ketis & Kersnik, 2010) and economic situation of respondents (Subashini & Udayanga, 2020). Depression and anxiety may also be connected with self-medication (Hofmeister, et al., 2010).

Self-medication among university students has been surveyed in different parts of the world. In the survey conducted among final year medical students in Slovenia, 94.1% students stated that they self-medicated (Jasminka, et al., 2014). In the researches among students of several different universities outside Europe, prevalence ranged from 38.5% in Ethiopia (Abay & Amelo, 2010), 96.0% to Egypt (Wael, et al., 2020) and to 98.0% in Palestine
There are also paucity of studies exploring self-medication among students, or general population in Morocco. The data on this phenomenon are very limited and needs further investigations. Survey of self-medication among university student population is important because this population represents a segment of highly-educated members of the society that have better access to health care-related information, and other students to self-diagnose and self-medicate. The purpose of this paper is to investigate prevalence and risk factors for self-medication among population of University Sultan Moulay Slimane (USMS) students.

2. Material and methods

The cross-sectional study was conducted among students of the first, third and sixth year of USMS in Beni Mellal in a form of a survey that was carried out in the period March 1st 2017-April 13th 2017. All interviewees voluntarily participated in the survey after being briefed in detail about the goals and methods of the study. The survey was anonymous and all obtained data is kept as confidential. The Ethical Committee of the Sultan Moulay Slimane University of Beni Mellal reviewed and approved the study.

The first part of the questionnaire included basic data about respondents (sex, age, faculty, Field of study), personal habits (tobacco smoking, alcohol consumption, use of psychoactive substances, physical activity), health insurance, as well as data about comorbid somatic and mental disorders.

The second part of the questionnaire included data about self-prescribed medications, reasons for self-medication, methods of supply and duration of use of self-prescribed medications.

The sample size was determined by using the equation of one proportion: \( N = \frac{Z^2pq}{d^2} \), where \( N \) is the sample size, \( p \) is the prevalence of self-medication taken as 50%, \( q = (1 - p) \), \( Z \) is the standard normal deviation (usually set at 1.96, which corresponds to the 95% confidence interval), and \( d \) is the desired degree of accuracy set at 0.05 to tolerate a 5% error. Accordingly, the calculated minimum sample size \( N= 377 \) Students. For better precision, we took an additional 99 of them. Thus, a total of 476 students studying in the institute were considered to be eligible to participate in the study.

The returned questionnaires were checked for completeness of data, the data obtained from the completed questionnaires were analyzed by using the statistical software Excel, Microsoft 2016. Categorial variable were expressed as percentages or frequency, and continuous variable were expressed as means ± SD or median. \( P \) value of 0.05 or less was considered to the statistically significant. Risk factors associated with self-medication were analyzed by comparing patients with chi-square tests.

3. Results

Socio-Demographic Characteristics of Study Participants

A total of 476 students participated in the study and successfully completed the questionnaire, of whom 252 (52.94%) were female and 224 (47.06%) were male. Among these 476 students, 141 (29.62%), 219 (46.01%) and 110 (23.11%) were studying in their first year, second year and final year respectively. Also, 264 (55.46) were biology students and 212 (44.54) were no biology students. The participants’ mean age was 22.78 ± 2.8 years. while the age group of 17 to 22 years dominated accounting for 86.76 % of the study population. The basic respondent’s demographic characteristics are presented in Table 1.
Table 1: Socio-demographic characteristics of study population

<table>
<thead>
<tr>
<th>Socio-demographic factors</th>
<th>Number of students (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>224 (47.06%)</td>
</tr>
<tr>
<td>Female</td>
<td>252 (52.94%)</td>
</tr>
<tr>
<td>Age group (years)</td>
<td></td>
</tr>
<tr>
<td>17-22</td>
<td>413 (86.76%)</td>
</tr>
<tr>
<td>23-27</td>
<td>57 (11.97%)</td>
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<tr>
<td>28 et plus</td>
<td>06 (1.26%)</td>
</tr>
<tr>
<td>Formation</td>
<td></td>
</tr>
<tr>
<td>Biology</td>
<td>264 (55.46%)</td>
</tr>
<tr>
<td>Other than biology</td>
<td>212 (44.54%)</td>
</tr>
<tr>
<td>Year of study</td>
<td></td>
</tr>
<tr>
<td>First year</td>
<td>141 (29.62%)</td>
</tr>
<tr>
<td>Second year</td>
<td>219 (46.01%)</td>
</tr>
<tr>
<td>Third year</td>
<td>110 (23.11%)</td>
</tr>
<tr>
<td>More than third year</td>
<td>06 (1.26%)</td>
</tr>
</tbody>
</table>

Prevalence of self-medication and Illness/Symptoms for Self-Medication

A total of 294 (62%) students reported having practiced self-medication during the study period, with 129 males (44%) and 164 females (56%). The majority of them were between 17 and 22 years old with 87.07 %.

Present study reveals that 61.13 % of university students started their self-medication during the length of childhood. Also, It was found that the prevalence of self-medication varied significantly among different years of students as evidenced by the fact that 44.7 % of second-year students practiced self-medication compared to 31.3 % of first-year students and 24.1 % of final-year students.

Reason, Source of Drugs and Information for Self-Medication, Type of Requested Drug, and Outcome of Treatment

Among the total 294 respondents that used self-medication, 26.07 % of them reported that they used self-medication due to lack of money, 26.07 % of them reported that they used it due to the fact that the disease was not serious and 29.14 % of them used it for Emergency.

It was found that cough and common cold (32.51 %) and headache (38.7 %) were the predominant morbidity for which students practiced self-medication. Other causes of morbidity prompting the students to practice self-medication included diarrhea, fever, pain in the abdomen due to heartburn/peptic ulcer.

Drugs or drug groups commonly used for self-medication included analgesics (38.7 %) followed by cough suppressants (32.51 %), antipyretics (16.63 %), antibiotics (9.68 %), antiulcer agents, cough suppressants, multivitamins, and anthelmintics.

Fifty-eight percent of the source of drugs for self-medication among university students were purchased from pharmacies, followed 32.11 % of drugs given from classmates and 5.89 % of unused drugs stored at home.

The most common sources of information for self-medication, which were denoted in multiple choice questions, were family, seniors or classmates (37.13 %), recommendation by community pharmacists (25.75 %) and medication leaflet (20.05 %).

The majority of university students reported having practiced self-medication (72.48 %) were not satisfied after taking drugs for self-medication. Also, more than half of them were decided to stop taking drugs without medical advice in case of no results after taking these drugs.

82.66 % of students claim to have been forced to consult a doctor following failure of self-medication.

4. Discussion

The aim of this study was to assess the prevalence and associated factors of self-medication among students of USMS, Beni Mellal. The current study revealed that the prevalence of self-medication practice among the participants was found to be 62 %. This finding is almost
similar to the studies conducted at King Soud University, Saudi Arabia (50.9%) (AlRaddadi, et al., 2017), University of Gondar (52.4 %), Ethiopia (Nuhamin, et al., 2020), Mansoura University, Egypt (62.9%) (Helal, M & Abou-ElWafa, S, 2017) and Anbar and Fallujah Universities, Iraq (73%)(Al Shawi, A , et al., 2018).

Whereas our study finding was higher than those studies conducted in Rwanda (12.1%) (Tuyishimire, et al., 2019), Spain (12.7%) (Figueiras, et al., 2000), Tabuk city/KSA (43.24%) (Alzhahrani & Aloqbi, 2015), New Delhi, India (44.5%) (Yadav & Rawal, 2015) and China (47.8%) (Pan, et al., 2012). This difference might be due to the respondents’ cultural difference, healthcare systems, infrastructures, and socio-demographic characteristics. For example, the well-established healthcare systems and infrastructures in developed countries might create suitable conditions for clients to consult their healthcare professionals and use drugs ordered by these professionals. As a result, their self-medication practice would be lower than the result of our study. Additionally, respondents from Spain, India and China countries could get strong health education about the risk factors of self-medication and its negative effect on health and life, so this leads them to lower self-medication practices.

On the other hand, the finding of this study was lower than those studies carried out in Aris University, Ethiopia (77.1%) (Bekele, et al., 2016), University of Karachi, Pakistan (81.28%) (Shoaib, et al., 2013), University of science and Technology, Irbid, Jordan (96%) (Alshogran, Y.O ,et al., 2013), Southern Nigeria (91.4%) (Osemene & Lamikanra, 2012). This difference might be due to the variation in socio-demographic and economic profiles, geographical and study time variation in which self-medication practice was assessed, and availability of drugs on over the counter.

In the case of the factors associated with self-medication, female respondents were more likely to use self-medication. This finding is in agreement with studies conducted in Ghana (Donkor, et al., 2012), Mekele and Jimma Universities, Ethiopia (Gutema, et al., 2011), Taibah University, Saudi Arabia (Aljaouni, et al., 2015) and University of science and Technology, Irbid, Jordan (Alshogran, Y.O ,et al., 2013). The possible reason might be female students faced recurrent disease conditions more than their male counterparts related to their relatively low immunity and continuous menstrual cycle due to hormonal effect.

This monthly menstrual cycle is strongly associated with anti-pain drugs like Ibuprofen, which may result in gradually adapting drugs and make them hesitant not to visit healthcare organizations that finally leads them to a high magnitude of self-medication (Nuhamin, et al., 2020).

In this study, those respondents who had higher income per month were less likely to use self-medication than who had lower income. This finding is in line with studies carried out in University of Gondar, Gondar, Ethiopia (Nuhamin, et al., 2020). The possible justification might be students who have lower income might not be able to afford to visit healthcare institutions and to consult licensed health professionals. So, they might be urged to buy drugs with the lower cost from over-the-counter centers without prescription which, in turn, leads to high self-medication practice. However, this finding is in contrast with studies conducted in Southern China (Pan, et al., 2012) and Pakistan (Limaye, et al., 2017). These studies revealed that income and self-medication practices have direct relationship and justified those students who have lower income might visit the school health clinic that delivers free service, or they might ignore miner disease conditions like the common cold.
In the present study, the most commonly used drugs were analgesics and cough suppressants. This is consistent with the findings of previous studies which reported that analgesics and anti-inflammatories were highly used in self-medication (Jerez-Roig, et al., 2014; Domingues, et al., 2017). In fact, Domingues et al. (2017) explained this by the strong association between self-medication and the presence of minor diseases and conditions. Similarly, El-Nimr et al. (2015) reported that the most commonly used drugs were analgesics, followed by cough and common cold preparations and vitamins and minerals (El Nimr, et al., 2015). In our study, the possible reason might be the climatic fluctuations of the Beni Mellal region, and USMS proximity to agricultural areas.

Most (95.4%) of the drugs were purchased from community pharmacies as a source of drugs for self-medication. This finding is in line with studies carried out in Mekelle University, Ethiopia (Eticha, et al., 2014), Mansoura University, Egypt, (Helal, M & Abou-ElWafa, S, 2017), Southern, China (Pan, et al., 2012), Karachi, Pakistan (Limaye, et al., 2017), and Southwestern, Nigeria (Osemene & Lamikanra, 2012). Conversely, the other studies showed that the source of drugs for self-medication were drug stores (Osemene & Lamikanra, 2012; AlRaddadi, et al., 2017) and unused drugs stored at home (Jassim, 2010).

Regarding the source of information for self-medication, family, seniors or classmates, community pharmacists and medication leaflet were the most common sources of information. This finding is not comparable with findings from Mekele, Ethiopia, Indonesia (Eticha, et al., 2014; Widayati, et al., 2011), which these studies revealed that pharmacists were the most common sources of information.

The practice of self-medication exposes the individual, especially the elderly, to the risk of adverse events, iatrogenesis, and the masking and aggravation of diseases, subjecting them to functional impairments that may compromise their autonomy and capacity for participation.

5. Conclusion
Assessing students’ self-medication practice and associated factors are very important to different stakeholders to intervene in drug misuse and overcome its impacts. The current study revealed that the prevalence of self-medication practice among university students was high. And the most common disease condition was a headache, and the primary requested drug was Analgesics. Family, seniors or classmates were the most common source of drugs for self-medication. Gender, high students’ monthly income, the sixth year of study were the factors that affected self-medication practices. Therefore, by taking into account the high magnitude, its impact, and the associated factors, it requires great attention especially when students stay longer in university for attending education. Moreover, strict drug prescription by health professionals and creating awareness of drug regulation to the students are essential. Although it is difficult to monitor self-medication practices, interventions such as dissemination of information about potential problems in self-medicating would be prudent. Emphasis should be given to increase access to modern health facilities by creating mechanisms to reduce cost of medication, uncontrolled channels of drug dispensaries, and taking corrective measures on illegal drug purveyors.

Conflicts of Interest
Authors declare no conflict of interest.
References


