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Self-Medication Practice with Nonprescription Medication among University Students: a review of the literature

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Abstract

Objective: To review the literature relating to self-medication practice with nonprescription medication among university students.

Methods: A narrative review of studies on self-medication practice with nonprescription medication among university student was performed. An extensive literature search was undertaken using indexing services available at Universiti Sains Malaysia (USM) library. The following keywords were used for the search: self-care, self-medication, over-the-counter medicine, nonprescription medicine, minor illnesses, minor ailment, university population and community pharmacy. Electronic databases searched were Science Direct, Medline, ISI Web of Knowledge, Inside Web, JSTOR, Springer Link, Proquest, Ebsco Host and Google Scholar. These electronic databases were searched for full text papers published in English.

Results: Eleven studies were identified. In general, the review has shown that self-medication practice with nonprescription medication highly prevalence among university students. The reasons for self-medication are vary among this population and the main symptoms leading to self-medication are headache or minor pain; fever, flu, cough, or cold; and diarrhoea. The common medication is analgesic, antipyretic products, cough and cold remedies, anti allergy and vitamins or minerals. The sources of the medicines are pharmacy, home medicine cabinet, supermarket/shop and other person such as family, friend, neighbours and classmates. The sources of drug information are family member, previous experience, pharmacy salesman, doctor or nurse, advertisement and others. The review also has shown that the self-medication practice could have many problems.

Conclusions: The review provides insights about the self-medication practices among the university students. These practices were highly prevalence among university students. The symptoms leading to self-medication are vary, thus the medication used and the medication sources. It needs an adequate drug information and appropriate pharmaceutical care in self-medication practice appropriately among university student. Further study looking into the self-medication related problems associated with non-prescription products is needed.

Key words

Self-care, self-medication, minor illnesses, minor ailment, university, student

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Introduction

Self-medication is an important part of daily self-care behaviour and one of the vital issues under debate in healthcare systems [1-5]. Self-medication is defined as obtaining and consuming drug without the advice of physician either for diagnosis, prescription or surveillance of the treatment [6], or usage of any medication for self treatment without consultation of heath care professional [7].

Self-medication is fairly common practice in the world, especially in economically deprived communities. When practiced correctly, self-medication has a positive impact on individual and health care system. It allows patients to take responsibility and build confidence to manage their own health, thereby, promoting self-empowerment. Furthermore, it can save the time spent in waiting to see a doctor, maybe economical, and also over saving for medical schemes and the national healthcare system [5].

The WHO has also pointed out that responsible self-medication can help prevent and treat ailments that do not require medical consultation and provides a cheaper alternative for treating common illnesses. Nevertheless,

the individual bears primary responsibility for the use of self-medication products. All parties involved in self-medication should be aware of the benefits and risks of any self-medication product [7]. However, some researchers have reported that patients are likely to practice self-medication, and revealed the extensive use of self-medication products [8-11].

Self-medication patterns vary among different population and are influenced by many factors, such as age, gender, income and expenditure, self-care orientation, education level, medical knowledge, satisfaction and perception of illnesses [1, 4, 12-14]. A high level of education and professional status have also been mentioned as predictive factors for self-medication [4].

Although self-medication can readily relieved acute medical problems, but most importantly, it can save the time spent in waiting to see a doctor, and even save life in acute condition and may contribute to decrease healthcare cost [5, 15]. However, it may associate with a certain risk. In several studies it has been found that inappropriate self-medication results in wasting of resources, increase in pathogens resistance and generally entails serious health hazards such as imposes on risk of drug interactions, adverse drug reactions, prolonged suffering and drug dependence [5, 14, 16-19].

The misuse of non-prescription drug among university students has become a serious problem. Media exposure and the increase of pharmaceuticals advertisement pose a larger threat to this population. It raises concern of incorrect self-diagnosis, drug interaction and use other than for the original indications. A survey on widely advertised medication indicated that majority of college student used at least one of the advertised product, without discussing with their physicians [20].

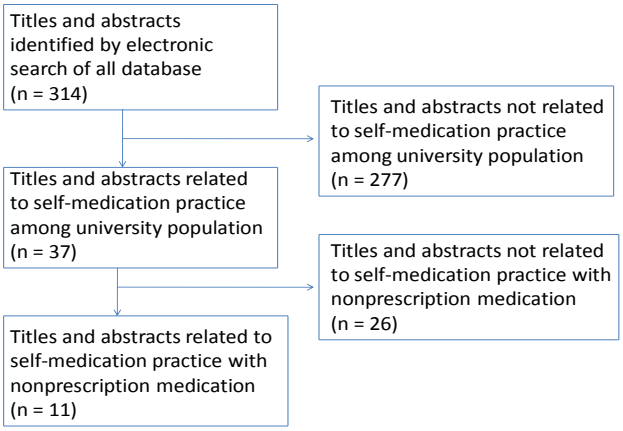
There is a paucity of studies on self-medication among the university students. They were chosen for this review as they represent the group that were highly influenced by media and internet that promote self-medicating behaviour [20]. The primary aim of this review is to explore the self-medicating activities among the university students. An examination of these activities in treating medical conditions may lay out an opportunity to explore tools in a better way equip the university's healthcare providers deal with the self-medicating student. The review is largely concerned with this population which it is felt to merit in more detailed examination, and attempts to address the following matters: (i) prevalence of self-medication practices among university students; (ii) most likely reason for such practices; (iii) types of symptoms; (iv) types and sources of medications use (v) sources of information; and (vi) self-medication related problems.

Methods

A literature search was performed to identify published studies related to self-medication practice with nonprescription medication among university students. The search strategy involved using Boolean operators for combination of the following terms: self-care, self-medication, over-the-counter medicine, nonprescription medicine, minor illnesses, minor ailment, university and student. The search was limited to full paper articles published in English and there was no limitation related to the time of publication. Our search was limited to self-medication practice with nonprescription medicines. Electronic databases searches included Science Direct, Medline, ISI Web of Knowledge, Inside Web, JSTOR, Springer Link, Proquest, Ebsco Host and Google Scholar. The search result has been selected base on criteria that elaborate the self-medication practice with nonprescription medication among the university students. Thus studies related to self care practices among the general population were excluded. Also excluded were studies restricted to prescription drug utilization among the university students.

The flow chart of the review process is depicted in Figure 1. Three hundred and fourteen titles and abstracts were identified from electronic searches of the databases. From these searches, 277 titles and abstracts not related to self-medication practice among university population. Thirty seven full text and abstract articles were evaluated for further assessment. However, twenty six studies that did not reflect the self-medication practices with nonprescription medication among this population were rejected. In the final review, eleven studies which satisfied the selection criteria were included in the final analysis.

Figure 1 Flow chart of the review



Results

The search results revealed that most of these articles were population-based studies and were designed as cross-sectional study. Furthermore, the sampling methods were varied among the studies, ranging from convenience [21-24], randomly [25-30], and web base survey [31]. One of the articles was a preliminary study with the number of samples 50 students each group only [23].

We provide a narrative review of the studies that had been published for the past three decades. Table 1 describes the population and samples, demographic characteristics (age, gender, and the field of study), and self-medication practice and main products used among

the university students.

Demographic characteristics and prevalence of self-medication practice

Most of these studies cited the mean age of students was less than 25 years old. This was reflected by the majority of the samples was undergraduate students. In term of gender, majority of the students who have practiced self-medication are female, except in study which have been conducted by Hussain et al. [23] and Sogunro et al. [25].

Three of these studies have been employed to students majoring in both health and non-health courses [22, 27, 31], while two of the studies have employed to students only majoring in health [21, 24], and the rest did not disclosed the field of the students involved in the studies [23, 25, 26, 28-30]. Prevalence of self-medication practice among the university student was varied.

The incidence of self-medication reported was largely depended on how the question was constructed in the questionnaire. For instance, if the question asked was related to the current practice of self-medication, the incidence reported was high [22, 24, 26-28, 30, 31]. On the contrary, when asked whether the students had used any medication for the past one month, the incidence reported was low [21, 23, 27]. However, some studies did not reported the prevalence of self-medication [25, 29]. Due to the difference in the methods used in studies, therefore, it is quite difficult to estimate the true prevalence rate of self-medication in university students.

Reasons for self-medication practice

Majority of the authors agreed that the main reasons for self-medication medication among university students were their previous experiences, their health problems was considered as too trivial and time savings. Other reasons for self-medication practice were advice family or friends, availability of transport, ability to self-manage the symptom, convenience, doctor was not available, urgency of the problem, and have sufficient information [22, 24-27, 29, 31]. Hussain (2008) have reported that the main reason to self-medication practice among university student were lack of time and low cost consultation [23]. Another author, Sawalha (2008) stated that lack of time and lack trust to medical doctor was the main reasons for self-medication practices among students, however, the sample size studied was small [27].

Symptoms leading to self-medication

Only three authors have reported the symptom leading to self-medication practice among university student [21, 22, 24]. These authors reported that the main symptoms leading to self-medication were headache or mild pain; fever; flu, caught and cold; and diarrhoea. Others symptoms includes allergy, skin problems, inability to sleep, vomiting, eye and ear symptoms, menstrual syndrome and others minor problems.

Type of medications

The most common types of medications used by the university students reported include analgesics, antipyretics, cough and cold remedies. Other products which were considered popular among university students were anti-allergies, vitamins, and minerals [21, 22, 24, 27, 30].

As described in Table 1.0, the types of medicines used by students were varied among the studies reviewed. Some of the authors did not specify the types of medicines used. Among those studies that quantitatively evaluate the types of medicines showed a wide range of medicines by the students. The types of medicines reported by these studies range from cough and cold products, vitamins, minerals, herbal products, to homeopathy and modern medicines [23, 26, 28, 29, 31].

Sources of medicines

From the studies that stated the sources of medicines for self-medication, it was noted that the sources were varied. These includes: the pharmacies, home medicine cabinet, supermarket, retail outlets, as well as from friends, family, neighbours, and even classmates [21, 22, 26, 31]. One author stated that those students even obtained their medicines from traditional healers and homoeopaths [31].

Sources of drug information

In this review, only two authors have reported the sources of drug information in self-medication practice [23, 26]. These authors reported that the students get access to drug information from various sources. These includes from their own past experiences, family, friends or university course mates, pharmacy sales representative, doctor or nurse, and advertisement in the television, radio, newspaper, magazine or books.

Problems-related to self-medication practices

In the context of self-medication practices, several authors had highlighted the problems associated with the practices among university students. In this regards, we consider the problems related to self-medication (MRPs) as any practices, actions, or behaviours of the students that might contribute to their health risks. The MRPs were varied as reported by several authors. These include a failure to cure an illness in 35% of respondents studied [25], use of prescription only medicines(POM) and recreational drugs [21, 22, 25-27], inappropriate use of medicines and did not read the packet insert before using the medicine [21, 26]. The POMs include antibiotics, sedatives, tranquilizers, and stimulants; while the recreational drugs are the narcotics such as marihuana and cocaine. One study reported that students may altered the dose of medicines or they may intentionally stopped the taking the medication [22].

Verma et al (2010) and Ghosh et al (2010) reported that some students were alcoholic, smoker or have chronic problems like non communicable disease, but they have less awareness regarding drug interactions between the medications that they consume with alcohol, smoking, and problems of interactions with chronic diseases [28, 29]. In addition, Ali et al (2010) reported cases of accidental drug poisoning in 8.3% of students in their study [30].

Another important findings worth of highlighted in this review was the impact of health education on the awareness of drug's side-effects among the self-medicating students [21, 24]. James et. al. (2006 and 2008) studied the impact of exposure to medical information to both the first year and senior medical students. The study revealed that problems associated with self-medications were less in senior medical

students [24] as compared to the first year student [21]. Lack of medical knowledge might contributed to the low self-confidence of the first year medical students.

Conclusion

Findings from the review indicates that self-medication activities among university students were varied and posed concerns about its appropriateness and problems associated with unsupervised self-medication. Therefore, we recommend for the university authorities to include health-related campaign as part of the orientation program for new students.

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Table 1. The population, sampling, demographics characteristic, and self-medication practice among some university population

Study (Year)	Population	Sampling	Total of Samples	Age (range)	Sex		Type of school		Practice of self-medication	Main Product
					Male	Female	Health	Non health		
Sogunro et al. (1980) [25]	The Nigerian student at University of Ife, Ile-Ife	random sample	167	NS	53.9	46.1	NS	NS	NS	a, c, e, f
Lau et al. (1995) [26]	The Chinese University student, Hong Kong	randomly selected classes	563	20.5 ± 2.2	39.1	60.9	NS	NS	94.0	a, b, c, g
James et al. (2006) [21]	1st year medical students of the Arabian Gulf University, Bahrain	convenience	134	18.1 ± 0.78 (17-21)	32.1	67.9	100	NA	44.8	a, b, c, i
James et al. (2008) [24]	2nd and 4th years of the medical course at the Arabian Gulf University, Bahrain	convenience	141	19.94 ± 1.21	32.6	67.4	100.	NA	52.6/73.3*	a, c, d, g
Zafar et al. (2008) [22]	two medical and two non-medical universities students, Karachi	convenience	572	21 ± 1.8	41.1	58.9	51.6	48.4	76.0	a, b, f, g
Sawalha (2008) [27]	An-Najah National University student, Palestine	randomly selected classes at different faculties	1581	19.9 ± 1.7 (18-24)	35.5	63.3	29.7	73.3	98.0 37.7 in the past month	a, c, d, h
Hussain et al. (2008) [23]	undergraduate students, four university, Islamabad	convenience	200	NS	79.5	20.5	NS	NS	42.0	NS
Verma et al. (2010) [28]	professional student of the U.P. Technical University, Lucknow	random sample	1022	20.13 ± 2.32 (17-25)	NS	NS	NS	NS	87	NS
Ghosh et al. (2010) [29]	student at three college of the west Uttar Pradesh	random sample	231	17 years, above	NS	NS	NS	NS	NS	NS
Klemenc-Ketis et al. (2010) [31]	Ljubljana university student	web-base study	1294	22.4 ± 3.24	13.4	76.6	50.2	49.8	92.3	NS
Ali et al. (2010) [30]	female student on USM, Malaysia	two stage random sample	491	22.1 ± 3.3 (19-54)	NA	100	NS	NS	80.9	a, c, f, i