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(OR= 2.501, P = 0.037).

ABSTRACT The objective of this study is to find out the prevalence and determinants of self-medication among college students in Baghdad, Iraq. A cross-sectional survey was conducted in Al-Mustansiriyah and Al-Nahrain universities, Baghdad, from January to April 2015. A multistage random sampling technique was adopted to collect data from 1435 college students using a questionnaire form. The mean age of the joining students was 19.8 years. Females form 53% of the sample. Self-medications use was prevalent among 92.4% of students. Antipyretics and antibiotics were the most used medicines. Self-medication was higher among urban residents (OR= 7.99, P

Prévalence de l’automédication parmi les étudiants à l’Université de Bagdad : étude transversale iraquienne

RÉSUMÉ La présente étude a pour objectif d'estimer la prévalence de l'automédication et d'en identifier les déterminants parmi les étudiants à l'Université de Bagdad (Iraq). Une étude transversale a été menée dans les universités d'Al-Mustansiriyah et d'Al-Nahrain à Bagdad, entre janvier et avril 2015. Une technique d'échantillonnage aléatoire à plusieurs degrés a été adoptée afin de collecter les données auprès de 1435 étudiants à l'aide d'une questionnaire. L'âge moyen des étudiants ayant participé à l'étude était de 19,8 ans, et 53 % étaient des femmes dans l'échantillon. L'automédication était prévalente pour 92,4 % des étudiants. Les médicaments les plus utilisés étaient les antipyrétiques et les antibiotiques. L'automédication était plus élevée parmi les citadins (OR = 7,99, p

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Introduction

Self-medication defined as patient use of medicines on his/her own initiative or according to advice from a pharmacist or a layperson instead of consulting a medical practitioner (1). Their use reported as being on the rise in the recent years especially among adolescents and young adults worldwide (2).This behaviour varies among countries, age groups, and between the sexes (3).

In the United States of America (USA) 75% of health problems are treated with non-prescription medicine (4): opioids are used by 13–18%, followed by stimulants, including amphetamines (5%), and sedatives (4%) (5). Results from a 2005 study showed that 82% of women and 71% of men in the USA had used a self-medication drug in the previous 6 months (6). This was about twice their number of doctor visits or using a prescription medication (6). In 2008, the retail sales for self-medication medicine approached US$ 17 billion, rising to US$ 26.5 billion in 2014 (7). About 36 million Americans use pain relief medications daily without professional health care advice (8). Around 16 500 deaths and 103 000 hospitalizations due to self-medication with non-steroidal anti-inflammatory medicines (NSAIDS) alone are reported each year in the USA (9).

Previous studies from the Middle East region revealed a high prevalence of self-medication by university students, ranging from 98% in a study from Palestine (10) to 55% in a study from Egypt (11). The students in this region used analgesics and herbals, often followed by vitamins and antibiotics, while opioids, stimulants and tranquilizers were used rarely (12–13). However, in a study carried out among university students in Jordan, antibiotics were the main self-medication used by 67.1% of the study sample (13).

In European countries, the greatest use of self-medication is found in the United Kingdom and Germany, while Croatia and Greece rank as the least (14). A recent study from the United Kingdom (UK) and Ireland reported that stimulants were the most commonly used medicines (41.5%) followed by vitamin supplements (29.2%) (15).

Healthcare services in Iraq, including medication, is open and free; despite this, the practice of self-medication is prevalent.

To the best of our knowledge there have been few if any existing studies conducted in Iraq about self-medication use, especially among university students. The results of this study are important to build baseline data for Iraq.

The aim of this research was to discover the prevalence and determinants of self-medication practice among university students in Baghdad.

Methods

Sample selection

This cross-sectional survey was conducted during the period January–April 2015. A multistage random sampling technique was adopted by selecting 3 universities (Baghdad, Al-Mustansiriyah and Al-Nahrain) out of the main 5 in Baghdad. Colleges were selected from each university, according to the number of colleges in those universities, variety of available specialties and number of students. See Figure 1 for a schema showing the sampling process. Using stratified random sampling, 50% of the students in the selected classes who were available at the time of the study and accepted to participate were invited to participate in this survey. Subclasses were considered the primary sampling units.

Sample size (17)

N = ([Z2 × P × (1–P)/(E)2] × Deff × sex estimate)/expected response rate

N = (384 × 1.7 × 2)/0.8 = 1633

Level of confidence measure (Z-value): 1.96 (for 95% confidence level)

Margin of error: 0.05

Baseline levels of the indicators (P): 0.5

Design effect (Deff): 1.7 (16)

Expected response rate: 0.8

Number of sex estimates: 2

Data weighting and adjustment

Sometimes the sample proportion may differ between strata, thus data must be weighted to represent the population correctly. The overall students' number in the 3 selected universities was 58 956. The following formula was used for data weighting (17).

Wi is the raw weight for the data P1i is the probability of selection of the Universities, P2i for the colleges, P3i for the grades, P4i for the subclasses, P5i for the students and P6i for students' age proportion

Questionnaire

A semi structured questionnaire was developed to collect the relevant information pertaining to the study variables. In addition to information about age, sex, residence and academic grade, the questionnaire included the following questions in regard to self-medication.

Have you ever used medications by yourself (non-professional prescription)?

What are the medicines that you used?

What was the purpose of taking these medicines?

Did you experience adverse effects after taking these medications? Did these complications require professional medical intervention?

Who advised you to take these medicines?

What was your source of information about the medicines?

What were the reasons behind taking medicines without consulting a physician?

What was your source for purchasing the medicines?

The questionnaire was revised by a scientific committee (community medicine consultants) for reliability and content validity. It was then piloted on a small sample of 30 college students from different universities to test the clarity and the applicability of the study tools, and to identify any difficulties that may be faced during data collection. The time needed for filling the questionnaire form by students was also estimated during this pilot study. Then, according to the results

obtained, any necessary modifications were done. The pilot sample was not included in the study sample. The Kuder–Richardson formula 20 (KR–20) for internal reliability was 0.763 (18).

After obtaining official approval and task facilitating documents from the scientific committee of the Iraqi Counsel for Medical Specialization and approval from the ethics committee of the same council, the researchers contacted the Dean's office of each of the selected colleges to explain the objectives and rationale of the study and to get permission for data collection.

The students were met in the selected classes for about 15 minutes to explain and discuss the questionnaire items for more clarification before they were asked to complete the questionnaire. The questionnaire was anonymous to avoid causing any embarrassment to the respondents. Every student was given the complete unconditional choice to participate without any reward or penalty, and was assured that confidentiality of data throughout the study would be secured and that the data would not be used for purposes other than research.

They were asked to complete the questionnaire. This had been developed from several studies discussing a similar subject and was submitted to the committee in English. It was translated to the Arabic language for the purpose of simplification (and then retranslated into English for validation). Each completed questionnaire was considered as an informed consent for joining the study. The researcher visited each college twice during the day (08:30–14:30). Data collection took about 10 weeks for the 3 selected universities. We distributed 1633 questionnaires; 1435 were completed giving a response rate of 87.9%.

Statistical analysis

Each questionnaire was assigned a serial identification number. The data were analysed using SPSS, version 20. The data were presented as mean, standard deviation (SD), frequency and percentage. Sampling weights were used in the analysis.

The chi–squared test was performed to assess the statistical relations between defined dependent and independent variables. The independent t-test was used to test the mean age difference between users and non-users of self-medication. Binary logistic regression was used to assess the adjusted odds ratio (OR) for association between the independent variables and self-medication; only significant variables found in the bivariate analysis were included in the model. P-value