

ABSTRACT

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Title of Doctoral Thesis **Analysis of the Use of Antibiotics in the United Arab Emirates**

Introduction and Aims:

The misuse of antibiotics for viral infections (for which they are of no value) and the immoderate use of broad spectrum antibiotics instead of narrower spectrum antibiotics have been well-documented and reported. Therefore the inappropriate use of antibiotics is getting a global problem, mainly in the developing countries. Emergence of antibiotics resistance is often a result of irrational prescribing patterns, misuse of the antibiotics as well as self-medication.

Although the United Arab Emirates (UAE) antimicrobial policy restricts dispensing of antibiotics without prescription, studies revealed the wide availability of these agents over the counter (OTC), their over prescribing pattern and the high prevalence of self-medication with antibiotics, unfortunately and regardless of this results, there is a lack and paucity in studies that tracking the prevalence of antibiotics resistance. The aim of our research was to evaluate the attitude of the community towards the use of antibiotics, estimate the prevalence of self-medication with them, identify the socio-demographic factors, which are related to the community and the pharmacists, that affecting this practice. In our research we also identify the frequent used antibiotics, their sources of obtaining and the reasons why they used.

1. Attitudes towards antibiotics use among banking employees in Sudan, Oman and UAE.

Aims:

The aim was to assess current knowledge, attitudes and behaviour towards antibiotics (ATB) among banking employees, evaluate parents' awareness of antibiotics use by their children and determine sources of antibiotics use.

Methodology:

A descriptive-cross sectional study was conducted in Sudan, Oman and UAE, targeted banking employees. A 18-item questionnaire was used for data collection. Descriptive statistical analysis was done in SPSS® version 11 software.

Results:

450 employees were nominated (150 each region), only 331 employees participated in the study; the rate of response was 64.6%, 74.0%, 82.0% in Sudan, Oman and UAE respectively. Mean age was 34 years. Males represented 66.6%. Within the participants 49.3%, 26.9%, and 47.8% were reported antibiotics use without prescription in Sudan, Oman and UAE respectively. Parents with higher educational level were tending to give their children antibiotics without prescription mainly in Sudan. Amoxicillin and amoxicillin / clavulanic acid were the leading used antibiotics by respondents and their children mainly for respiratory tract infections. 53.1% obtained antibiotics as over the counter based on their own request for the specific antibiotic.

Conclusion:

Self-medication with antibiotics is reasonably high within banking employees in Sudan, Oman and UAE.

Multi factorial interventions are believed to reduce the incidence of this practice including: an intensive public health plans; awareness regarding the consequences of self-medication with antibiotics throughout health education and restrictions that stop the availability of antibiotics without prescription.

2- Self-medication with antibiotics by the community of Abu Dhabi Emirate, United Arab Emirates (UAE)

Aims:

The study aimed at identifying the major socio-economic factors that are related to self-medication with

antibiotics and the main types of antibiotics used in this practice and reasons behind it. Another goal was to characterize the sources of obtaining antibiotics without prescription.

Methodology:

A Descriptive-cross sectional study was conducted during Abu Dhabi Book Fair; in April 2006. Visitors of the Book Fair were invited to participate in the study. Data were collected through a structured, pretested, validated, self-administrative questionnaire. In order to help the participants to remember the antibiotics they used, we developed a portrait containing labels from the available types of antibiotics in the health premises.

Data obtained was entered into a micro computer running the statistical package for social sciences (SPSS version 11.0) software. P value was calculated by setting the reference value and comparing it with other values. $P < 0.05$ was considered statistically significant.

Results:

Out of 1000 invited visitors 860 agreed to participate in the study; the rate of response was 86.0%. Males represented 65.8% of the participants. Use of antibiotics was significantly affected by age $p < 0.001$ as well as the educational level $p=0.023$. Amoxicillin was the antibiotic most commonly used by the participants and for their children (46.3% and 70% respectively). 44.3% acquired their antibiotics without a prescription as self-medication. The method of obtaining antibiotics was significantly affected by the age of the participants $p= 0.014$. There were 45.6% out all participants stated that, they can intentionally use antibiotics as self-medication without a medical consultation, which was significantly affected by the educational level of the visitors $p < 0.001$. A significant association was found between the behavior of keeping antibiotics at home and the gender

$P < 0.001$ and age $p=0.002$. Influenza had been the major reason that mostly treated by prescribed or self-medication antibiotics. This finding confirms the belief of the community that antibiotics can treat and eradicate any infection irrespective of their origin.

Conclusion:

The study confirmed that antibiotic self-medication is a relatively frequent problem in UAE. Interventions at different levels are required in order to reduce the frequency of antibiotics misuse. Managerial interventions: involve work on up-dating the antibiotics policy and guide to antimicrobial therapy 2nd Edition 1998, establish a National Antibiotic therapeutic adviser committee. The educational interventions for both prescribers and patients/consumers (educational campaigns on antibiotics, their uses and limitations) are of paramount importance. Moreover, the National mandatory health insurance scheme may play an important role to diminish this problem.

3- A comparative study between prescribed and over-the-counter antibiotics

Aims:

The main aims of this study were to examine the influence of demographic characteristics (age, gender and years of work experience) of the pharmacist with respect to dispensing antibiotics (with and / or without prescription) in terms of legalization, rationality and safety and to examine the pattern of dispensing antibiotics (with and / or without prescription) in terms of frequency, costs and indications (reasons for dispensing).

Methodology:

Cross-sectional study, conducted in Abu Dhabi Emirate during the period from March to September 2009. The study carried out in (n= 24) randomly selected community pharmacies. Data were collected through closed-structured questionnaire. The cost was calculated in Emirate Dirham, each dirham is equivalent to 3.7 US\$. Data were entered and analyzed using SSPS version 17. Descriptive Statistics: odds ratios (OR), significance and 95% CI were calculated and logistic regression was conducted.

Results:

Participating pharmacists conducted a total of 1645 transactions involving antibiotics, 1211 (73.6%) dispensed with prescriptions and 434 (26.4%) without prescriptions. Strong predictors for dispensing antibiotics without a prescription using the logistic-regression model were pharmacist's age ([OR] 1.36; $P=.001$), pharmacist's gender (OR 0.621; $P=.001$), experience (OR 0.686; $P=.001$), and patient's

socioeconomic (OR 1.836; P=.001) patient's gender (OR, 1.346; P=.012) Clarithromycin, cefuroxime and amoxicillin/clavulanic acid were the most frequently dispensed antibiotics with a prescription (91.5%, 91.3%, and 66.4%, respectively). Ceftriaxone, amoxicillin and amoxicillin/clavulanic acid were the most frequently dispensed antibiotics without a prescription (53.3%, 47.8%, and 33.6% respectively). Antibiotics dispensed with a prescription were frequently given as a 5-, 7- or 10-day regimen, while those dispensed without a prescription were frequently given for duration of 3 to 7 days. Co-amoxiclav was commonly dispensed for sore throat without a prescription. Ceftriaxone was dispensed at a similar rate, both with and without a prescription for sexually transmitted diseases (STD).

Conclusion:

Prevalence of dispensing antibiotics by community pharmacists without prescription is illegal and alarming. Pharmacists with long pharmacy practice dispense antibiotics as OTC more often than younger ones. Pharmacists and patients' perception, knowledge and attitude are crucial in developing interventions to improve the current practices of dispensing antibiotics. Insurance company may develop low-priced formulary antibiotics models to help low income patients to acquire their antibiotics after consulting the physicians. Drug utilization research have become critical, in order to gain firsthand knowledge of what is being consumed.