Survey on the irrational use of antibiotics among adults in Egyptian community

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ABSTRACT
This study was done to evaluate the knowledge and the conduct of grown-ups in Egyptian group towards anti-microbial utility. We conducted a face to face survey study. Information was gathered from 865 Egyptians, living in various places. The mean age was 38±16 and 57% were female. Anti-infection agents were conceded independent from anyone else prescription among 72%±8.5 and just 35%±8.7 put stock in the significance of anti-microbial affectability societies. 29%±4.5 of the responders did not take after the direction of utilization precisely. Around 67%±19.4 of the example detach treatment prior and around 23%±3.3 conceded utilizing extra anti-infection agents. More limitations are required for lessening the accessibility of non-endorsed anti-microbial and instructing the overall population to dissipate misguided judgments about the utilization of anti-biotics will lead to a healthy and safe population. Awareness regarding utility of anti-biotics without prescription should be created. Strict actions should be taken for the pharmacist who dispense drugs without prescription

KEY WORDS: Irrational use of antibiotics, self-medication, Egyptian population

INTRODUCTION
Antibiotics are considered among the most commonly sold drug classes in the developing countries [1]. Anti-microbial resistance is a rapidly increasing worldwide problem. Irrational use of antibiotics is the major determinant in the development of resistance. Many factors such as doctors’ knowledge, experience, diagnostic uncertainty, economic conditions and pharmaceutical marketing lead to irrational use of antibiotics. Numerous studies of adults have shown that patients’ expectations or physicians’ perceptions of those expectations affect the physicians’ prescribing behavior [2-7]. Educational interventions directed at patients and clinicians can increase patients’ knowledge and awareness and can also reduce the frequency of inappropriate antibiotic prescription by clinicians [8, 9]. The other factor for irrational antibiotic use is the sale of antibiotics without prescription. This questionnaire-based study was undertaken in order to assess the attitude of adults (over 18 years old) living in Egypt regarding antibiotic use, by identifying weak areas and gaps in adults’ knowledge, so that more appropriate educational efforts can be applied and a more rational antimicrobials use may be achieved.

MATERIALS AND METHODS
Study Design
This study was carried out using a cross-sectional design; participants were selected randomly in an attempt to obtain a representative sample of the Egyptian population. A pretested, pre-validated structured and anonymous questionnaire was given a sample of 865 adult Egyptians (anybody who appeared to be 18 years old or above) informed consent to participate in the study was taken verbally. Our research assistants interviewed members of the general public at different study sites (e.g. shopping malls, supermarkets, The University, etc.). To facilitate data collection, the questionnaire was translated in Arabic language for non-English speaking candidates. Consequently 19 revised questions were used in the questionnaire. Data was collected between March till December 2015. In this study, demographic data of the respondents such as sex, age social status, education level and occupation were explored as shown in Table 1. Their knowledge and behavior towards antibiotics treatment was evaluated in other section.
Statistical analysis was performed using the SPSS for Windows release 10.0 (SPSS Inc., Chicago, IL, USA). Categorical data were presented as frequency of occurrence and were analyzed by the χ²-square test. Continuous data are presented as mean and were analyzed by Student’s t-test. All tests were two-tailed with alpha levels of 0.05 considered significant.

RESULTS

The adult survey was completed by 865 (97.6%) of 886 individuals who were approached. Others refused to complete the survey for different reasons. Female respondents were 56.9%, about 580 (67%) of the respondents age was between 25 and 45 years old. Over half of the respondents (57.8%) were single. 236 (27.28%) had low education level. The demographic details of the sample are summarized in Table 1.

As per table 2 we analyzed the respondents’ medical condition and treatment status. We found that almost half (46.2%) of respondents visit the doctor three to four times in a year for fever, common cold, inflammation, etc. About 71% of the respondents use antibiotics without consulting the physician. 90% of the candidates use antibiotics especially when they complain for fever, cold, ear pain and sever tooth ache. 29% of the candidates are not satisfied with the medical service provided by the doctor.

Respondents’ knowledge and behavior towards antibiotics treatment was evaluated as per table 3. Respondents’ knowledge was low as 65% of them lacked knowledge about the importance of antibiotics resistance in a culture. We found that 65.8% of the respondents were not following the exact instructions. A ratio of 1:3 respondents discontinued therapy once his/her symptoms subside without the consultation of physician. In fact, 77% of the respondents never read the antibiotic leaflet given with the antibiotic. Though 61% respondents were aware about the dangerous effects which result from the misuse of antibiotics.

Figures (1 a-e) summarize respondents’ irresponsible behavior toward antibiotic treatment. About 71% of respondents reported that they used antibiotics directly without a physician’s prescription (OTC) in the past year as shown in (figure 1, a). 62.8% use non prescribed antibiotics oftenly and 48.3% of source for the antibiotics are the pharmacist who provide without a prescription. The results showed that 60.6% of our responders answer ‘yes’ about changing of their prescribed antibiotic by the pharmacist (figure1, d). About half (52%) of responders reported that antibiotics are available in pharmacies without physician prescription as shown in (figure 1, e).

DISCUSSION

Self-medication with antibiotics is defined as the acquisition of antibiotics and self-administering them with the aim of treating infection [10]. This practice is worldwide, in both the developing and industrial countries [11]. This study revealed that a high percentage of antibiotics being used without physician’s consultation (86.8%) either directly from pharmacies (48.3%), from family and friends (26%) or left-over antibiotics (20.4%). Of those who were used an antibiotic in the past year and agree with the statement that misuse of antibiotics may cause serious side effect on health, this result showed the contradicting between knowledge and behavior among the respondents [12, 13]. This result agree with result reported by Mayadah S. et al., 2012[14].

In this survey, significant association between using of non-prescribed antibiotics, level of education (P=0.01), age (P = 0.003) and gender (P =0.014) were revealed. The majority were females with low level of education (61.4%). Furthermore, statistical analysis did not reveal significant relation between occupation (P = 0.137) and self-medication. Whereas, Sawair et al., 2009 [15] and Al-Azzam et al., 2007[16] were reported that medication increases as occupation income increases.

Significant association between using of non-prescribed antibiotics, non-satisfied responders of medical service (P=0.002), low satisfied (P = 0.04) and medium satisfied (P =0.014) were revealed. This result conclude that as the level of satisfaction with provided medical service decrease the use of non-prescribed antibiotic will increase.

Despite the lack of studies into community pharmacists’ attitudes to microbial resistance and antibiotic use, some studies, undertaken in hospital settings to compare the attitudes of pharmacists and physicians to hospital antibiotic policies [17], stress the important role played by pharmacists in hospital guideline implementation and the therapeutic decision making process, even in
primary care [17]. Community pharmacists’ have an important role to play in policy and guideline implementation and patient management of medication, i.e., antibiotic use, but there are no validated tools for measuring their attitudes to these issues. Our survey showed that pharmacists have a big role in dispensing non-prescribed antibiotics and changing the prescribed one in Egyptian community. Also more than fifty percent of the responders reported that non prescribed antibiotics is available in pharmacies without prescription. Successful implementation of International antibiotic regulations should be supported by the government to dispense antibiotics with physician prescription. Also improvement of medical service provided is a must to eliminate usage of non-prescribed antibiotics.

CONCLUSION

In Egypt, inadequate enforcement of drug regulations raised inappropriate antibiotics consumption. As revealed in this study, about 71 percent of respondents bought antibiotics directly from pharmacy without prescriptions. The pharmacists also dispensed the drug without a prescription, they also changed the dose regimen. Which should be strictly prohibited. As it will lead to hazard effects on the health of the individuals. To prevent this practice, health authorities have to implement their regulations strictly to prohibit the selling of antibiotics without prescription.

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