Mediterranean Journal of Pharmacy & Pharmaceutical Sciences
www.medjpps.com

ISSN: 2789-1895 online
ISSN: 2958-3101 print

ORIGINAL RESEARCH article

Evaluation of self-medication with antibiotics in Libyan community

Wafa Alsadiq Abdulsalam Meerah

Department of Pharmaceutics and Industrial Pharmacy, Faculty of Pharmacy, University of Zawia, Zawia, Libya

Received: 09-03-2023, **Revised:** 25-03-2023, **Accepted:** 28-03-2023, **Published:** 31-03-2023

HOW TO CITE THIS
Meerah WAA (2023) Evaluation of self-medication with antibiotics in Libyan community.
Mediterr J Pharm Pharm Sci. 3 (1): 77-81. [Article number: 107]. https://doi.org/10.5281/zenodo.7771724

Keywords: Antibiotic, antibiotic resistance, drug, Libya, self-medication

Abstract: Self-medication of antibiotics is an irrational use of drugs, contributing to microbial resistance, increasing healthcare costs and higher mortality and morbidity. This study aimed to assess self-medication with antibiotics without a medical prescription in the community of Libya. This is a cross-sectional study conducted from June to December 2022 and the total number of participants was 200. The design of the study and sample size were modified according to the proficiency of pharmacists and the medical and non-medical population of Libya. The questionnaire was developed in English and Arabic language and was distributed through social media platforms. The questions were used after a thorough literature search and assessing the validity and reliability. The significant signs regarding reasons for the treatment by self-medication drugs of antibiotics, because of its various drugs of antibiotic by pharmacist (n=80, 40.0%) and family (n=90, 45.0%) compared with experience and physicians by used prescription was 13 (6.50%) and significant sings regarding by nasal congestion self-medication of various antibiotics (n=100, 50.0%). This sign must be practiced based on a previous physician's prescription. The antibiotics are often self-administered as patients feel that they will save money and time but this can lead to substantial adverse drug reactions, antibiotic resistance, treatment failure and drug-related toxicity. This study respondent's medical and non-medical public of Libya who should be relatively informed and educated about the risk of treatment by self-medication of antibiotics with the development of resistance.

Introduction

Self-medication is defined by the WHO (World Health Organization) as drugs used to treat self-diagnosed disorders or symptoms or the intermittent or constant use of prescribed drugs for chronic or repeated disease or symptoms [1]. Self-medication of antibiotics has been known as wrong and irrational use of antibiotics and overall is considered illogical [2]. Internationally, without prescription ingesting of antimicrobials has been growing and is a critical risk factor for anti-microbial resistance. Because of this, in most of the countries, regulation forbids patients to procure antimicrobials over the counter [3] as it is understood as powering the development of resistant microbes [4]. However, in some countries such as Latin America and Libya, the law is often not made or ineffective and patients can get such drugs without prescriptions [5, 6]. Self-medication of antibiotics includes obtaining medicines with no prescription, using old prescriptions to buy medicines; using extra medicines from friends or relatives for similar symptoms and giving medications to other family members or dependent relations, e.g., children and older family members [7]. Self-medication of antibiotics

ISSN: 2789-1895 online
ISSN: 2958-3101 print

is one of the leading worldwide issues causes of antimicrobial resistance and can lead to health risks because of the wrong diagnosis, dosage, preparation, route, risk of side effects and drug interactions [8]. Self-medication of antibiotics can also lead patients to more disease, drug requirements and mismanagement [8]. From a public health perception, a critical issue is how to inform and instruct patients to take obligation for their healthcare (which may involve self-medication such as analgesia) at the same time as considerate when they should not self-medicate with medications such as antibiotics [9]. In Libya, antibiotics can be bought over the counter and use without a prescription (self-medication) was reported high rate [10] such as Augmentin and azithromycin to treat Influenza, bacterial and urinary tract infections, erythromycin has also been widely used to cure respiratory tract infections. All these medicines show increased antibiotic resistance [11, 12]. Thus, the current study was aimed to further explore self-medication phenomena of antibiotics in the Libyan community.

Materials and methods

Study design: This study is a cross-sectional method and was conducted from June to December 2022 and all data was for 200 participants. The design of the study and the sample size were modified according to the expertise of pharmacists and the medical and non-medical subjects and the population of Libya. The questionnaire was developed in English and Arabic language and distributed through social media platforms. The questions were verified after a thorough literature search and assessing the validity and reliability of the questionnaire. The responses were made anonymous to maintain confidentiality and reliability. Clarification of the contents and the purpose of the study were explained at the start to the participants and followed by informed consent. The questionnaire included ten questions; five questions dedicated to the general demographical data including gender, age, level of medical education, marital status and comorbidity conditions of the participants. The next four questions were based on the treatment by self-medication of antibiotics to prevent and treat the respiratory symptoms: drug selection, the reasoning for self-medication, symptoms they were looking to improve and if any of the drugs improved those symptoms. The Libyan participants were asked if they consulted a physician before starting medications or not. All the questions if answered as no have been considered as self-medication with antibiotics. Drugs listed in the study included azithromycin, Augmentin, amoxicillin, erythromycin and ciprofloxacin.

Statistical analysis: All data were analyzed by using *SPSS* for Windows software version 22. The socio-demographic characteristics of the participants were described using frequency and percentage since they are categorical variables, medical and non-medical population differences tested by Chi-square test.

Results

In this study, with regard to the demographic data, **Table 1** shows that out of the total 200 participants, 5.0% medical and 95.0% non-medical students were included in the final study analysis. The majority of the respondents were between 16 years and 80 years old. The male subjects were greater than the female subjects (60.0% males and 40.0% females). The status of the participants was 30.0% single and 70.0% married. Comorbidities were present in 100 subjects (50.0%) and absent in the rest (n=100, 50.0%). **Figure 1** shows a comparison between medical and non-medical participants regarding the use of self-medication with antibiotics. A significant difference in non-medical participants' use of antibiotics. In contrast, it might be expected, that a higher percentage of medical students use it. **Table 2** shows a statistically significant sign regarding reasons for treatment by self-medication with antibiotics, because of various antibiotics by a pharmacist (n=80, 40.0%) and family (90, 45.0%) compared with experience and physicians by used prescription was 13 (6.5%) and significant sings regarding by nasal congestion (n=100, 50.0%) self-

ISSN: 2789-1895 online
ISSN: 2958-3101 print

medication of various antibiotics drugs. This sign must be practiced based on the previous physician's prescription. Differences were found relating to a lack of trust in asking physicians as one of the reasons for treatment by self-medication phenomena of using various antibiotics drugs.

Table 1: Socio-demographic data of the participants

Variables	Frequency (%)
Gender	
Male	120 (60.0)
Female	80 (40.0)
Age (years)	200 (16 - 80)
Medical students	10 (5.00)
Non-medical students	190 (95.0)
Status	
Single	60 (30.0)
Married	140 (70.0)
Comorbidities	
Present	100 (50.0)
Absent	100 (50.0)

Figure 1: Practicing self-medication of antibiotics

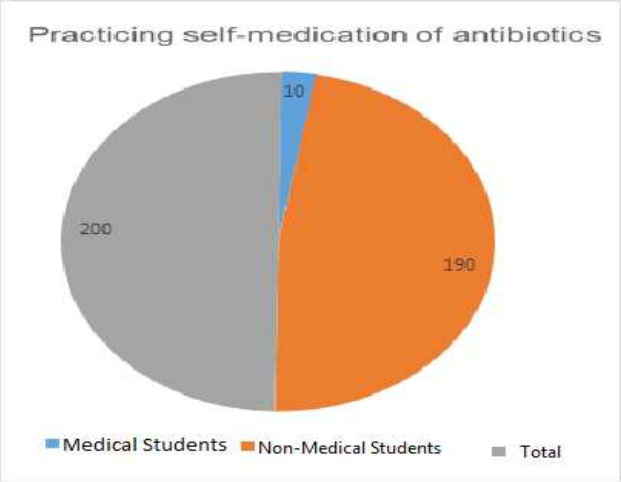

Table 2: Treatment of antibiotics as self-medication

Variables	Frequency, %
Symptoms	
Running Nose	30 (15.0)
- Nasal congestion	100 (50.0)
Cough	20 (10.0)
Sore throat	30 (15.0)
Fever	14 (07.0)
Vomiting	06 (03.0)
Self-medication	
Pharmacist	80 (40.0)
Family	90 (45.0)
Friend	15 (07.5)
Experience	02 (01.0)
Medical students	13 (06.5)

Discussion

Medicines by prescription contain antibiotics that are often self-administered as patients feel that they will save money and time. This can lead to substantial adverse drug reactions. Self-medication of antibiotics is often an ambiguous phenomenon and the practice is common in developed and developing countries [1, 10], however, it has not extensively been qualitatively or quantitatively studied [1, 13]. The incidence of self-medication with antibiotics in this study revealed about 80.0%, a finding comparable to self-medication of antibiotics occurrence rates in studies conducted overseas. Thus, among the nursing undergraduates in Saudi Arabia, self-medication practice with antibiotics was found to be as high as 87.0% [14] while in Kenya, the healthcare self-medication of antibiotics prevalence has also been high (60.4%) among healthcare workers indicating an increase from pre-pandemic results [15]. In another study, the prevalence of assessing self-medication with antibiotics in the Nigerian population during the pandemic was found to be 41.0% [16]. In Togo, 34.1% of the participants that belonged to the healthcare, air transport, police, road transport and informal sectors reported to self-medicate and the healthcare division had the highest of 51.9% [17]. Multiple

ISSN: 2789-1895 online
ISSN: 2958-3101 print

studies report that the high rate of self-medication of antibiotics can be explained by the poor or lacking drug control measures, regulatory policy and planning whereas antimicrobials are generally prescription-only drugs, patients can buy them over the counter because of the poor practice of regulatory agencies and individuals acquiring antibiotics to sell on the black market [10-12, 17]. In addition, the public might have poor knowledge about antimicrobials acquired from advertisements on television, radio and print media. In addition to advice from friends and family [15], cost and convenience are other factors. Patients in an expensive healthcare system cannot afford to pay the consultation fees of the physicians, or going to a physician's clinic or to the hospital is too much of a hassle [15]. In light of financial and workforce constraints, governments are gradually encouraging people to treat minor health ailments themselves and if people do not understand the consequences of self-medication with antibiotics, they will see taking antibiotics as the same as taking analgesics [9]. Thus, respondents of the public of Libya should relatively be informed and educated about the risk of treatment by self-medication with antibiotics and the development of drug-resistance microbial strains, treatment options are increasing and this leads to more visits to physicians, prolonged hospital stays, more expensive proprietary drugs, higher health care cost, poorer quality of life for individuals, increased mortality and loss of potential work hours. Thus, this study highlights the phenomena of self-medication with antibiotics and resistance in Libya. Educational policies and strategies as well as a strict regulation of purchasing antibiotics in Libya are highly and urgently desirable [18].

Conclusion: This study reveals that antibiotics are often self-administered as patients feel that they will save money and time which is a major health problem in Libya. This can lead to a substantial adverse drug reaction, antibiotic resistance, treatment failure and drug-related toxicity, consequently, serious action is needed to minimize the frequency of self-medication phenomena with antibiotics.

Acknowledgments: The author would like to thank all the involved participants in this study for their help.
Data availability statement: The raw data that support the findings of this article are available from the corresponding author upon reasonable request.
Conflict of interest: The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.
Ethical issues: Including plagiarism, informed consent, data fabrication or falsification and double publication or submission were completely observed by the author.
Author declarations: The author confirms that all relevant ethical guidelines have been followed and any necessary IRB and/or ethics committee approvals have been obtained.

References

1. Bennadi D (2014) Self-medication: A current challenge. Journal of Basic and Clinical Pharmacy. 5 (1): 19-23. doi: 10.4103/0976 0105.128253
2. Alhomoud F, Aljamea Z, Almahasnah R, Alkhalifah K, Basalelah L, Alhomoud FK (2017) Self-medication and self-prescription with antibiotics in the Middle East-do they really happen? A systematic review of the prevalence, possible reasons, and outcomes. International Journal of Infectious Diseases. 57: 3-12. doi: 10.1016/j.ijid.2017.01.014
3. Togoobaatar G, Ikeda N, Ali M, Sonomjamts M, Dashdemberel S, Mori R, Shibuya K (2010) Survey of non-prescribed use of antibiotics for children in an urban community in Mongolia. Bulletin World Health Organization. 88 (12): 930-936. doi: 10.2471/BLT.10.079004
4. Reardon S (2014) Antibiotic resistance sweeping developing world. Bacteria are increasingly dodging extermination as drug availability outpaces regulation. Nature. 509: 141-142. doi: 10.1038 / 509141a
5. Wirtz VJ, Herrera-Patino JJ, Santa-Ana-Tellez Y, Dreser A, Elseviers M, Vander Stichele RH (2013) Analyzing policy interventions to prohibit over-the-counter antibiotic sales in four Latin American countries. Tropical Medicine and International Health. 18 (6): 665-673. doi: 10.1111/ tmi.12096

ISSN: 2789-1895 online
ISSN: 2958-3101 print

6. Ghenghesh KS, Rahouma A, Tawil K, Zorgani A, Franka E (2013) Antimicrobial resistance in Libya: 1970-2011. Libyan Journal of Medicine. 8: 10.3402/ljm.v8i0.20567. doi: 10.3402/ljm.v8i0.20567
7. Kiyingi KS, Lauwo JA (1993) Drugs in the home: danger and waste. World Health Forum. 14 (4): 381-384. doi: Nil.
8. Ruiz ME (2010) Risks of self-medication practices. Current Drug Safety. 5 (4): 315-323. doi: 10.2174/ 157488 610792245966
9. Shah SJ, Ahmad H, Rehan RB, Najeeb S, Mumtaz M, Jilani HM, Rabbani MS, Alam MZ, Farooq S, Kadir MM (2014) Self-medication with antibiotics among non-medical university students of Karachi: a cross-sectional study. BMC Pharmacology and Toxicology. 15: 74. doi: 10.1186/2050-6511-15-74
10. Sherif FM (2008) An evaluation of the prescribing patterns of drugs in Libya. Jamahiriya Medical Journal. 8 (3): 203-206. doi: Nil.
11. Elfowiris AO, Majed NSS (2022) Antibiotic prescribing in pediatric health care service. Mediterranean Journal of Pharmacy and Pharmaceutical Sciences. 2 (3): 12-16. doi: 10.5281/zenodo.7115130
12. Boshhiha AM, Boshaiha ZM, Yousuf AT, Sad HA (2021) Use of over-the-counter medications among adolescents. Mediterranean Journal of Pharmacy and Pharmaceutical Sciences. 1 (4): 9-14. doi: 10.5281/ zenodo.5805918
13. Anwar M, Green J, Norris P (2012) Health seeking behaviour in Pakistan: a narrative review of the existing literature. Public Health. 126 (6): 507-517. doi: 10.1016/j.puhe.2012.02.006
14. Alghadeer S, Aljuaydi K, Babelghaith S, Alhammad A, Alarifi MN (2018) Self-medication with antibiotics in Saudi Arabia. Saudi Pharmaceutical Journal. 26 (5): 719-724. doi: 10.1016/j.jsps.2018.02.018
15. Onchonga D, Omwoyo J, Nyamamba D (2020) Assessing the prevalence of self-medication among healthcare workers before and during the 2019 SARSCoV-2 (COVID-19) pandemic in Kenya. Saudi Pharmaceutical Journal. 28 (10): 1149-1154. doi: 10.1016/j.jsps.2020.08.003
16. Wegbom AI, Edet CK, Raimi O, Fagbamigbe AF, Kiri VA (2021) Self-medication practices and associated factors in the prevention and/or treatment of COVID-19 virus: a population-based survey in Nigeria. Frontiers in Public Health. 9: 606801. doi: 10.3389/fpubh.2021.606801
17. Sadio AJ, Gbeasor-Komlanvi FA, Konu RY, Bakoubayi AW, Tchankoni MK, Bitty-Anderson AM, Gomez IM, Denadou CP, Anani J, Kouanfack HR, Kpeto IK, Salou M, Ekouevi DK (2021) Assessment of self-medication practices in the context of the COVID-19 outbreak in Togo. BMC Public Health. 21 (1): 58. doi: 10.1186/ s12889-020-10145-1
18. Smeda H, Murghem A, Khapoli A, Gaunos S, Alahrish R, Sherif FM, Alsharif SM (2020) Knowledge, attitude and pattern of antibiotic utilization among Libyan University students in Zawia. Iberoamerican Journal of Medicine. 2 (3): 161-166. doi: 10.5281/zenodo.3746060