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Public Knowledge and Beliefs on Antibiotics Use and Self-Medication in Basra

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***Abstract*—Self-medication is described as the use of medications to address illnesses or symptoms that one has independently diagnosed, as well as the irregular or continuous use of a prescribed substance to treat persistent or recurrent illnesses or symptoms. The fundamental issue with antibiotic self-medication is the development of pathogenic resistance. Antibiotic resistance is an issue that exists today, primarily in developing nations.**

The main objective was to study the public's beliefs and behaviors on antibiotic use as well as self-medication with antibiotics in Basra were studied.

Methods: a cross-sectional survey was conducted by using a validated questionnaire. This survey included 470 participants. (74 %) self-medicate with antibiotics. Community pharmacies (41.1%) were the most common source of antibiotics for self-medication. (74.5%) of the participants know that antibiotics are not useful for a common cold. (59.1%) of the participants have an idea of the possible harmful effects of using antibiotics. More than half of the participants 287 (61.1%) thought that self-medication with antibiotics is not an acceptable practice. (40.51%) stated as very bad practice and (32.72%) stated as bad practice.

Conclusion: Most of the participants beliefs that self-medication with antibiotics is not an acceptable practice, while 74% used this practices. It is important to properly follow up the regulations and controlling the distribution of prescription medications.

Keywords— self-medication, Prevalence antibiotics, Beliefs, Basra, Iraq

I. INTRODUCTION

The most common method of consuming antibiotics is the self-medication. Self-medication using antibiotics may result in the incorrect selection of antibiotics, the use of inadequate dosages, or the administration of unneeded treatment. This incorrect use raises the likelihood of resistant bacteria and may lead to resistance to antibiotics. Other issues associated with antibiotic self-medication include side effects, drug interactions, disguised diagnosis, and superinfection (Grigoryan, 2007).

Self-medication practices is the administration of medications to treat a self-identified illness; it may also be described as the recurrent or continual use of prescribed drugs for the treatment of chronic as well as recurrent diseases; it also includes the use of family members' medications (Kifle, Mekuria, Anteneh, & Enyew, 2021). Antibiotic self-medication has been identified as an improper and illogical use of antibiotics, and self-medication in general is considered irrational (Haque et al., 2019)

Many countries have realized the critical necessity to minimize their antibiotic usage in order to delay the spread of antibiotic resistance and so extend the usefulness of current antibiotic (PCAST, 2015; Swedres-Svarm, 2015). Understanding current antibiotic consumption in the population is critical to developing safe and effective antibiotic consumption reduction strategies. The proportional contributions of community-based and hospital-based antibiotic consumption to total human antibiotic consumption are critical in establishing the relative impact of initiatives to improve antibiotic prescription patterns within the community (Hons, Mbchb, Mbchb, & Mbchb, 2017).

Iraq seems to have no community pharmacy chains; the community pharmacies are individual independent pharmacies, typically run by certified pharmacists. Despite the fact that it is not permitted by law, it is usual practice to prescribe antibiotics without the need for a prescriptions. Additionally, the majority of community pharmacies hire pharmacy techs who also routinely prescribe antibiotics without prescription. This means, the circumstances for prescribing and using antibiotics in community pharmacies are poor and generally uncontrolled. While community pharmacists should document their daily prescribed medicines and the requirements need to be strictly enforced to avoid illogical prescribing of antibiotics within the private sector, this infrequently happens (Ali A Al-Jumaili, Hussein, Al-Rekabi, Raheem, & Ernst, 2017; Ali Azeez Al-Jumaili, Hussain, & Sorofman, 2013).

Additionally, antibiotics are frequently used in Iraq to treat any respiratory infections, including those brought on by viruses like the flu. Although considered only prescription drugs, antibiotics are still frequently available without a prescription. Numerous neighborhood private pharmacies disobey the usual legal restrictions on prescriptions for antibiotics, which results in the availability of these

medications without a prescription (Alkadhimi, Dawood, & Hassali, 2020). this behavior and others increased during the Covid-19 Pandemic in Basra (Abdulla, Maatook, & Mahmoud, 2021)

II. Subjects and Methods

A total of 470 participants who match the criteria of the study was enrolled. For achieving the aims of the present study, a descriptive cross-sectional household survey design was adopted. Using a structured questionnaire to conduct interviews the Participants were asked to provide consent agreement before participating in the interview. The interview was conducted in the context of a household study. Participants were given a list of photographic hard copy of antibiotics to identify the antibiotics that they may have been used. This was done in order to ensure that no mistakes were made while identifying the antibiotics. The data gathering process took place over a five-month period (from November to march) . Above 18 years of age, both sex, residents of Basra governorate and those who gave informed consent were included in the study. The data collected by the questionnaire were analyzed using SPSS version 26. Consideration was given to statistical significance whenever the P-value was less than 0.05 as in several other studies (Mohammed, Maatook, Aziz, Afat, & Hani, 2018). The results were displayed using bar charts, pie charts and tables. In order to assure the quality of the data obtained, the questionnaire was forwarded to the research supervisors, who assessed the validity and relevancy of each section of the questionnaire in relation to the study's overall objectives. The validity of the questions contained inside the questionnaire was tested for structure, content, and criterion validity. Additionally,

a group of local experts evaluated the questionnaire's items for accuracy. The questionnaire was then pilot tested with participants who had similar characteristics to the study participants in order to focus on the clarity of the language used and, as a result, the questionnaire's user-friendly structure. Minor adjustments came as a result of this, with several terms and structures being updated as a result of their replies.

III. RESULTS AND DISCUSSION

According to our research, a startlingly high rate of Basra residents—74 % antibiotics for self-medication and 26% did notuse these practices (Figure 1). Also in Riyadh City, 68.4 percent of people self-medicate using antibiotics, according to a study(Al Rasheed et al., 2016), while in Sudan and Yemen (Al Akhali, Alzomar, Khan, & Alavudeen, 2013; Shehnaz, Agarwal, & Khan, 2014)., 79.5 and 78.0 percent of respondents, respectively, self-medicate with antibiotics. In study by (Aslam et al., 2020), where 78 percent of respondents used antibiotics without a prescription, antibiotic use is also widespread. Given that most antibiotics in Iraq can be obtained from private pharmacies without a doctor's prescription, this high percentage may not be unexpected.

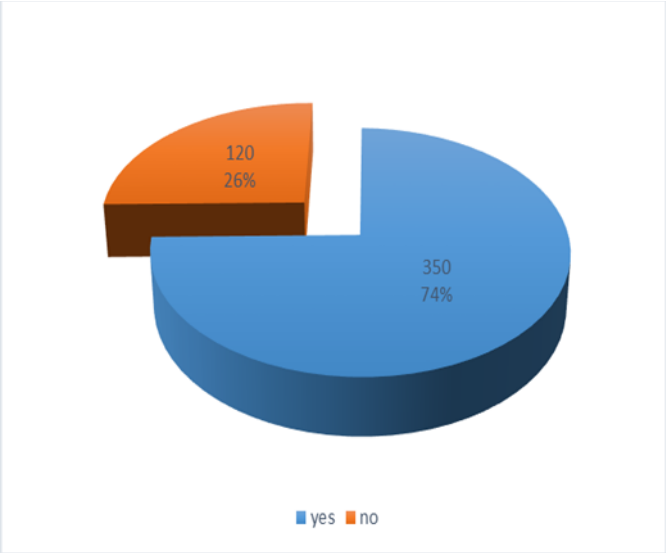

Figure 1: Antibiotic self-medication rate

Despite the fact that administering antibiotics without a prescription is illegal in Iraq according to the Ministry of Health regulations (Al-Taie, Hussein, & Albasry, 2021), pharmacies frequently sell and offer antibiotics to people without a prescription (Alkadhimi et al., 2020). Our current study supported this, with 85.3% of respondents getting antibiotics from neighborhood pharmacies. This is consistent with other studies (Al-Azzam, Al-Husein, Alzoubi, Masadeh, & Al-Horani, 2007), that reported pharmacies as the main source of antibiotics that used for self-medication and it is generally assumed because pharmacies are the main source of drugs, the second source in the current study was illegal drug store mostly from nursing clinic 34 (8.9%) and this may refer to the weak policies of the ministry of health, additionally leftover from previous prescription represent only (5.8%) as a source of antibiotics for self-medication as shown in **table (1)**.

TABLE (1) SOURCES OF THE ANTIBIOTIC USED FOR SELF-MEDICATION AMONG THE STUDY GROUP

Source of the used antibiotic	Responses	
	N	Percent
Community pharmacies	324	85.3%
Illegal drug store (street, nursing clinic)	34	8.9%
Leftover from previous prescription	22	5.8%
Total	380	100.0%

In table (2) 74.5% of the participants know that antibiotics are not useful for common cold. This result agree what (Al-Taie et al., 2021) found among Iraqi patient where only 30% of the patient thought that antibiotics are useful for common cold. (59.1%) of the participants have an idea of the possible harmful effects of using antibiotics, most of the participants thought that Intravenous is better than oral medication, they believe it speed up recovery more than oral medication.

TABLE (2) PARTICIPANTS INFORMATION REGARDING ANTIBIOTICS AND THEIR USE

Question	Answer	Frequency	Percent
Are antibiotics useful for common cold treatment	yes	121	25.5%
	no	349	74.5%
Are you aware of the potential adverse consequences of antibiotics	yes	278	59.1%
	no	192	40.9%
Higher dosages result in a quicker recovery	yes	57	12.1%
	no	413	87.9%
Lower dosages produce less bad side effects.	yes	191	40.6%
	no	279	59.4%
Switching antibiotics enhances drug effects	yes	37	7.9%
	no	433	92.1%
Switching antibiotics reduces adverse reactions	yes	47	10%
	no	423	90%
Intravenous is better than oral medication	yes	251	53.4%
	no	219	46.6%

More than half of the participants 287 (61.1%) as shown in **Table (3)** thought that self-medication with antibiotics is not an acceptable practice. This is consistent with a study in Afghanistan (Roien et al., 2020) in which most participants thought it is not an acceptable practice (40.51%) stated as very bad practice and 32.72% stated as bad practice). In a contrast study conducted by (Muhammed, Al-Ani, & Yassen, 2021) in Erbil, it was revealed that majority of survey participants stated that they are comfortable with self-medication with antibiotics. In Albania (Jorgji, Bebeci, Apostoli, & Apostoli, 2014), 34.7 % of the participants reported that they were satisfied with antibiotic self-medication . This can be attributed to their capacity to get knowledge and learn from online sources. This could also be related to earlier experiences and long-term antibiotic use, leading individuals to assume that they have the expertise to treat and select their antibiotics without a physician's prescription.

TABLE (3) PEOPLE THOUGHTS ABOUT SELF-MEDICATION WITH ANTIBIOTICS.

	Frequency	Percent
Good practice	4	.9
Acceptable practice	152	32.3
Not acceptable practice	287	61.1
Can be some time harmful	27	5.7
Total	470	100.0

VI. CONCLUSION

Most of the participant's believedthat self-medication with antibiotics is not an acceptable practice, while 74% used this practice. According to this study the population of Basra has a significant rate of poor antibiotic knowledge and remarkable self-medication with antibiotics rate. While physicians and patients must be educated about antibiotic use and the prevention of bacterial resistance, and laws prohibiting over-the-counter sales must be strictly enforced, more research is advised on the role of social interactions in antibiotic self-treatment among physicians.

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