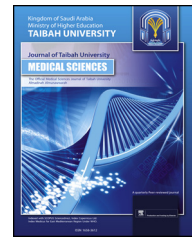




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Original Article

Perceptions and practice of physicians and pharmacists regarding antibiotic misuse at primary health centres in Qatar: A cross-sectional study

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المخلص

أهداف البحث: إن الاستخدام غير الملائم للمضادات الحيوية هو قضية صحية عالمية حرجية. وعدم الإشراف على وصف المضادات الحيوية هو ممارسة تعرض المجتمع إلى استخدام أدوية لا مبرر لها، وتسهم في حدوث مقاومة لمضادات الميكروبات. تقيم هذه الدراسة إدراك وممارسة الأطباء والصيادلة في مراكز الرعاية الصحية الأولية في قطر تجاه سوء استخدام المضادات الحيوية.

طرق البحث: في هذه الدراسة المستعرضة، تطوع ٢٢٦ طبيباً و٨٢ صيدلانياً في مراكز الرعاية الصحية الأولية. جمعت البيانات باستخدام تقنية أخذ العينات العنقودية متعددة المراحل. بالإضافة إلى ذلك، تم استخدام استبيانين ذاتية مستقلة للأطباء والصيادلة على التوالي.

النتائج: كان معدل الاستجابة ٨.٩٧% و ١٠٠% للأطباء والصيادلة على التوالي. واعتبر كل من الأطباء (٧.٩٠%) والصيادلة (٨.٨٧%) سوء استخدام المضادات الحيوية قضية صحية عامة رئيسية. ولمنع سوء استخدام المضادات الحيوية، ركز معظم الأطباء والصيادلة على تثقيف المرضى وكذلك الممارسة الجيدة لتعليم.

الاستنتاجات: قدمت هذه الدراسة أدلة جديدة عن إدراك وممارسة المهنيين الصحيين المتعلقة بوصف المضادات الحيوية في مراكز الرعاية الصحية الأولية في قطر.

الكلمات المفتاحية: مقاومة المضادات الحيوية؛ الصيادلة؛ الأطباء؛ الرعاية الصحية الأولية؛ قطر

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Abstract

Objectives: The inappropriate use of antibiotics is a critical global health issue. The lack of antimicrobial stewardship exposes the community to unwarranted medication and contributes to the development of antimicrobial resistance. This study evaluated the perceptions and practice of physicians and pharmacists at primary healthcare centres of Qatar with respect to antibiotic misuse.

Methods: In this cross-sectional study, we recruited 226 physicians and 82 pharmacists in primary health care centres. A multistage cluster sampling technique was used for data collection. Separate self-administered questionnaires were administered to physicians and pharmacists.

Results: Response rates for physicians and pharmacists were 97.8% and 100%, respectively. Both physicians (90.7%) and pharmacists (87.8%) perceived antibiotic misuse as a major public health issue. To prevent antibiotic misuse, most physicians and pharmacists reported a focus on patient education as well as good practices in their work.

Conclusion: This study provides novel evidence on the perceptions and practices of health professionals concerning antibiotic prescription in primary healthcare settings of Qatar.

Keywords: Antibiotic resistance; Pharmacists; Physicians; Primary healthcare; Qatar

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Introduction

Deaths owing to infectious diseases represented roughly 16% of all deaths worldwide in 2015 compared with about 35% in 1970.¹ Over the years, antibiotics have saved countless lives and eased the suffering of millions. However, pathogenic bacteria are becoming resistant to antibiotics at an alarming rate due to the widespread misuse of antibiotics in human and animal health, aquaculture, agriculture, and household products.² Moreover, the enormous growth of global trade and travel has led to the concurrent spread of infectious diseases as well as resistant microorganisms across continents.³ In recent history, the pharmaceutical industry has produced new antibiotics to replace old ones. However, a single antimicrobial takes one to two decades to develop, with research and development costs reaching half a billion US dollars.⁴

Globally, 700,000 people die every year owing to antibiotic resistance; this number is projected to reach 10 million deaths annually by 2050 unless effective action is taken.⁵ In the Eastern Mediterranean Region, the burden of antimicrobial resistance in terms of morbidity, mortality, and financial cost remains vague as official figures are not yet available, according to the World Health Organisation.⁶

Healthcare professionals, including physicians and pharmacists, have a key role in the emergence of antibiotic-resistant bacteria by prescribing multiple courses of antibiotics, long durations of treatment, first-line treatment with broad-spectrum antibiotics, and antibiotic treatment of viral respiratory tract infections.⁷ The reasons that prompt physicians to overprescribe antibiotics for viral respiratory infections include diagnostic uncertainty, sociocultural and economic pressures, and concerns about malpractice litigation.^{8,9} A study by Baadani et al. assessed the knowledge, perceptions, and attitudes of 212 physicians toward antimicrobial prescription in Riyadh, KSA. It was found that there is a considerable level of training deficiency, with a need for physician education regarding the prescribing of antimicrobials.¹⁰

According to the Centers for Disease Control and Prevention (CDC) in the United States, one out of every three antibiotic prescriptions is unnecessary.¹¹ It is estimated that in Qatar, there are 300,000 antibiotic prescriptions each year at the primary healthcare level.¹² Hence, early measures to optimize prescribing patterns to reduce inappropriate use are crucial. There are multiple factors influencing the prescribers and dispensers of antibiotics, which vary depending on geographical region, social circumstances, and the prevailing healthcare system. In Qatar, no previous studies have

attempted to uncover the perceptions and practices of physicians and pharmacists in the primary healthcare (PHC) setting regarding antibiotic misuse. Thus, we conducted this study to inform stakeholders of the current situation and guide future interventions for these healthcare professionals, to limit antibiotic resistance.

Materials and Methods

Description of the study area and population

The study was conducted in Qatar, located to the east of the KSA. Primary healthcare services in the country are mainly provided through 21 PHC centres with an average of 1 physician for approximately 3900 people and 1 pharmacist for 14,000 people.

The participants in this study included physicians (general physicians, paediatricians, otolaryngology specialists, and family physicians) as well as pharmacists who were employed at the primary healthcare centres. Physicians working in administrative positions were excluded from the study because they were not involved in the clinical care of patients and antibiotic prescription.

Type of study, sample size, and data collection

Type of study

This was a cross-sectional study that employed a multi-stage sampling technique. In the initial step, primary healthcare centres were divided into two groups; the first group included 10 primary healthcare centres outside Doha (the capital of Qatar) and the second included 11 centres within Doha. A total of six primary health centres were then randomly chosen, three from each group. Subsequently, proportionate random sampling was conducted to select interviewees from the chosen centres, depending on the size of the population served at each centre.

Sample size

The sample size was estimated using EPI Info version 2.3. In addition, the 50% rule was applied to estimate the perceptions and practices of antibiotic misuse among physicians and pharmacists in Qatar. The precision was set at 5% with a 95% confidence interval (CI) and design effect of 1.88. The inflation rate was taken as 20% to compensate for non-response. Subsequently, all physicians and pharmacists who met the eligibility criteria were enrolled. A list of those working in each PHC centre was obtained from the PHC administration, for simple random sampling.

Data collection

Separate questionnaires were developed for physicians and pharmacists. Each questionnaire was a modified self-administered, structured, and validated survey in the English language. The questionnaire included two parts, the first collected demographic data (sex, job description, and number of patients consulted per week) and the second queried data about the perceptions and practices of respondents with respect to antibiotic misuse.

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