

# Antibiotics 2019: Awareness of Prince Mohammad Bin Fahad University students toward the correct use of antibiotics and the issue of antibiotic resistance - Lina Alzayer - Prince Mohammad Bin Fahad University

Lina Alzayer, Zainab Ambani and Lucia-Marie Ganendran

Prince Mohammad Bin Fahad University, KSA

**Background & Aim:** Misuse of antibiotics is a serious health issue in Saudi Arabia in which it leads to the development and acceleration of antibiotic resistance. Awareness and good practice of antibiotic usage have a great influence on the public health. The current study assesses antibiotic awareness among university students in Saudi Arabia, based on their knowledge about what antibiotics should be used for, how to use them correctly, as well as the issue of antibiotic resistance and how to address it.

Most of the antibiotics are prescribed by general practitioners (GP). The primary care accounts for 80–90% of all antibiotic prescriptions in Europe and most antibiotics are prescribed for respiratory tract infections. Antibiotics utilization is also very important in other sectors; for instance, approximately 80% of antibiotics in the United States are consumed in agriculture, farming and aquaculture. Increasing in bacterial resistance combined with a steady decline in the discovery of new antibiotics has resulted in global healthcare crisis. Overuse of antibiotics and improper prescription of antibiotics are leading causes of multidrug resistance (MDR). The increasing use of antibiotics, particularly in developing countries, is a big concern for antibiotic resistance and can cause other health threats such as increased risk of recurrent.

The overuse of antibiotics clearly drives the evolution of resistance. Epidemiological studies have demonstrated a direct relationship between antibiotic consumption and the emergence and dissemination of resistant bacteria strains. In bacteria, genes can be inherited from relatives or can be acquired from nonrelatives on mobile genetic elements such as plasmids. This horizontal gene transfer (HGT) can allow antibiotic resistance to be transferred among different species of bacteria. Resistance can also occur spontaneously through mutation.<sup>9</sup> Antibiotics remove drug-sensitive competitors, leaving resistant bacteria behind to reproduce as a result of natural selection. Despite warnings regarding overuse, antibiotics are overprescribed worldwide.

In both the created and creating world, anti-toxins are generally utilized as development supplements in domesticated animals.

An expected 80% of anti-toxins sold in the U.S. are utilized in creatures, principally to elevate development and to forestall disease. Rewarding domesticated animals with antimicrobials is said to improve the general soundness of the creatures, delivering bigger yields and a more excellent item. Antibacterial products sold for sterile or cleaning purposes may likewise add to this issue, since they may confine the improvement of insusceptibilities to natural antigens in the two kids and grown-ups. Thusly, safe framework flexibility might be undermined, potentially expanding dismalness and mortality because of contaminations that wouldn't ordinarily be destructive.

**Method:** A cross-sectional study was designed, using a self-administered twenty-four item online questionnaire which was sent to all students of Prince Mohammad Bin Fahad University.

**Results:** A total of 320 students participated in the survey; of who 210 were females (65.6%) and 110 were males (34.4%). Only two-thirds of the students disclosed the use of antibiotics for bacterial infections. In addition, 50.0 – 57.5% of the students could not identify whether the common cold, fever, sore throat, skin infection and urine infection can be treated with antibiotics or not. On the other hand, the majority of the respondents knew how to correctly use antibiotics, as 84.1% of them revealed that they should follow the prescription of antibiotics exactly as directed by the doctor and not to discontinue the antibiotic course upon alleviation of the symptoms. Similarly, 73.4% of students revealed a high awareness level of the issue of antibiotic resistance and how to avoid it. However, around one-third of them thought that antibiotic resistant bacteria cannot spread from one person to another.

**Conclusion:** It is essential to develop an educational intervention to improve the students' awareness of the specific conditions that can be treated with antibiotics. Additionally, students should understand that antibiotic resistance is only accelerated by the misuse of antibiotics, but it can actually affect anyone, of any age, in any country.