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Evaluating Knowledge of Antibiotic Resistance among First Year Health Science Undergraduates in University of Ruhuna: A Cross-sectional Study

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Background: Antibiotic resistance (AR) has become a major global health problem. Poor knowledge about antibiotic usage and malpractices have directly contributed to the development of AR. As healthcare providers, identifying the knowledge of health science students on AR is important in planning effective interventions aiming for safe usage of antibiotics.

Objectives: To assess the knowledge of AR among first year undergraduates of Faculty of Allied Health Science, University of Ruhuna.

Methods: This is a descriptive cross-sectional study. Voluntary undergraduates in the first semester of the first academic year in 2021, not studied about antibiotics and AR during their academic programme, were recruited. A self-administered questionnaire was distributed via a Google form during organized zoom meetings. It consisted of 17 questions to assess knowledge on antibiotics and AR. Each correct answer was given one mark and zero mark was given for a wrong answer. Total knowledge score was calculated out of 17 for each participant. Frequencies and percentages of participants with correct answers were calculated using the SPSS version 26.0.

Results: Among the participants (n=190) more than 70% were females. Mean (SD) age was 22 (± 0.86) years. Approximately 79% (n=151) had a total knowledge score < 9 indicating below average knowledge about antibiotics and AR. Of participants, 90% (n=169) knew that antibiotics are used against pathogenic bacteria. However, the majority were not aware about the development of AR (92%, n=174) and its impact on curing infections (84%, n=158). More than 30% (n=65) had the false belief that antibiotics should be used always to cure diseases such as the common cold. Significant numbers of participants (54.5%) were not aware about the reasons for developing AR. Majority (60%, n=115) believed that if a person feels better after partially completing the antibiotic course, he/she can terminate the therapy immediately.

Conclusions: Majority of study participants had poor knowledge about proper usage of antibiotics and development of AR. Improving the knowledge about rational usage of antibiotics is essential to prevent development of antibiotic resistance which could generate fatal situations in future.

Keywords: *Antibiotics, Antibiotic resistance, Knowledge, Undergraduates*