

Bacteria causing ear canal infections (otitis externa) and their antibiotic sensitivity from mobile phone headsets used by Allied Health Sciences students of University of Jaffna

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Background and objective: Sharing of headsets among university students is common practice. Headsets may be a source for bacterial contamination and infection, especially otitis externa. This study aimed to determine the prevalence of bacteria that predominantly cause ear canal infections and their antibiotic sensitivity patterns from mobile phone headsets used by Allied Health Sciences students of University of Jaffna.

Methods: This was an institution-based cross-sectional study of students of Faculty of Allied Health Sciences, University of Jaffna. Participants were selected by stratified proportionate to population random sampling based on batches and courses. Data on influencing factors were collected using a self-administered questionnaire. Bacteria were identified according to the Laboratory Manual in Microbiology of the Sri Lankan College of Microbiologists and ABST was done according to the Clinical Laboratory Standards Institute method (Edition 26).

Results: Of 246 headsets tested for bacterial growth, 195 (79.3%) were contaminated with bacteria. Among them, 159 headsets were contaminated with ear canal infection causing bacteria, most commonly *Staphylococcus aureus* (46.3%), followed by Enterobacteriaceae (8.5%), *Pseudomonas* (7.7%) and β -haemolytic streptococci (2.0%). Most strains of *Staphylococcus aureus* were sensitive to chloramphenicol 106 (89.8%), norfloxacin (89.0%), and ciprofloxacin (90.7%). Notably, MRSA strains were identified in 14 (12.3%) samples. Headsets of students who follow hospital postings were more likely to be contaminated (64.5%) than others; those of students who used headsets daily were more likely to be contaminated (69.1%). Shared headsets were more likely to be contaminated (71.5%) ($p < 0.001$).

Conclusion: A substantial proportion of mobile phone headsets used by Allied Health Sciences students of University of Jaffna are contaminated with ear canal infection causing bacteria. Attending hospital postings is associated with contamination of headsets.

Keywords: Bacteria, Ear Infections, Antibiotics Sensitivity, ABST, Headsets