ISBN 978-624-6150-28-0

Types of bacterial contaminations, antibiotic sensitivity patterns and their influencing factors of wrist threads worn by students of Faculty of Allied Health Sciences, University of Jaffna

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Introduction: People of different religions wear wrist threads believing that it brings happiness, protection, good health, and spiritual strength. Wrist threads worn by healthcare personnel can harbour potential pathogens which can serve as vectors of infectious agents.

Objective: To determine the types of bacterial contamination, antibiotic sensitivity patterns and their influencing factors of wrist threads worn by students of the Faculty of Allied Health Sciences, University of Jaffna.

Methodology: It was a laboratory-based descriptive cross-sectional study done with 256 participants. A simple random sampling method was used for sample recruitment. Swabs were collected from the wrist threads using sterile cotton swabs moistened in sterile normal saline from August to September 2023. Data on influencing factors were collected using self-administered questionnaires. Isolated bacteria were identified according to the laboratory manual of the Sri Lanka College of Microbiologists whereas antibiotic sensitivity tests were performed according to the Clinical and Laboratory Standards Institute (CLSI) guidelines. Data were analysed using SPSS 20.

Results: Of the 256 wrist threads tested, 248 (97%) were contaminated with bacteria. Coagulase-negative Staphylococci were the most abundant isolates found in 202 (78.90%) wrist threads. Moreover, *S.aureus* in 6 (2.34%), Micrococci in 172 (67.18%), environmental Gram-positive bacilli in 94(36.71%) and skin commensal *Corynebacterium spp.* in 51(19.92%) were also found as contaminants. All isolated *S. aureus* were sensitive to gentamicin, cefoxitin, erythromycin, ciprofloxacin, and clindamycin. There was no statistically significant association between contamination and associated factors.

Conclusion: The majority of wrist threads are contaminated with potentially pathogenic bacteria; as a result, wrist threads can act as reservoirs of potentially pathogenic organisms. Therefore, it is recommended to wear it in a non-exposed location.

Keywords: wrist thread, bacterial contamination, antibiotic sensitivity patterns, University of Jaffna