

Determination of Bacterial Contamination on Mobile Phones Among the Students in UiTM Shah Alam

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Structured Abstract

Background: The emergence of mobile phones as an essential item generates various issues in terms of social and health. However, users tend to ignore the health problems related to mobile phones in facilitating the spread of diseases like flu, diarrhea, and eye infections. Bacteria discovered in the environment include table surfaces, toilet bowls, faucets, and hands. For university students, mobile phones are essential gadgets that help in performing their assignments, save notes or pictures, and communicate for biological-laboratory and non-biological laboratory work. These results in frequent exposure to microorganisms while the type and species might vary due to the divergent work areas. This study aims to determine the effect of hygiene habits of users on the type and distribution of the bacteria and their possible risk to human health among university students.

Methods: A survey on hygienic habits was developed based on reference from previous studies. This survey was distributed to the participants before bacterial isolation on their mobile phones using cotton swabs was conducted. Then, the samples were inoculated onto the agar plates to obtain single colonies. The isolated colonies were identified by performing Gram stain and biochemical tests. Finally, the identified colonies were proceeded with antimicrobial susceptibility tests.

Results: Based on the results from the biochemical tests, normal flora were dominated in all samples. The bacteria found were *Acinetobacter*, *Bacillus* spp., *Enterobacter aerogenes*, *Escherichia coli*, *Klebsiella* spp., *Shigella dysentery*, *Staphylococcus aureus*, *Staphylococcus epidermidis*, and *Staphylococcus hominis*. Furthermore, the listed bacteria were more abundant on the mobile phones of the biological laboratory students. Most bacteria also appeared to be susceptible to most antibiotics tested.

Conclusion: The results obtained indicate that mobile phones are colonized by normal flora as they are in contact with humans' hands predominantly. It sums up the potential risks they hold in becoming the breeding ground for microbial growth and the carrier of bacterial infections as they constantly develop antibiotic resistance.

Keywords: Mobile Phones, Biological laboratory, Non-biological laboratory, Normal flora, Antibiotics

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