

**NASAL COLONIZATION AND DRUG-RESISTANCE PATTERNS OF
Staphylococcus aureus AND *Staphylococcus epidermidis* AMONG YOUNG
RESIDENTS WITHIN THE VICINITY OF CALAJUNAN DUMPSITE,
MANDURRIO, ILOILO CITY**

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Nasal Colonization and Drug-Resistance Patterns of *Staphylococcus aureus* and *Staphylococcus epidermidis* among Young Residents within the Vicinity of Calajunan Dumpsite, Mandurriao, Iloilo City

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ABSTRACT

Poor disposal and handling of wastes is one of the problems in developing countries as well as in urban places. Leachate, which includes potential pathogens like *Staphylococcus aureus* and *Staphylococcus epidermidis*, occurs when solid wastes adsorb moisture and may contaminate ground water sources. The increasing antibiotic resistance of these species poses a great risk to those exposed to the dumpsite. This study generally aimed to investigate nasal colonization by multidrug-resistant *S. aureus* and *S. epidermidis* in young residents of Barangay Calajunan, Mandurriao, Iloilo City and to evaluate the relationship between multidrug-resistance of *S. aureus* and *S. epidermidis* and possible risk factors such as direct exposure to the dumpsite, close contact with waste-pickers, antibiotic use, hospitalization, skin and soft-tissue infections, and personal hygiene. Nasal swabs were obtained from eighty-three young residents aged 5-14 years. Isolation and identification of *Staphylococcus* spp. were based on standard conventional biochemical methods such as mannitol fermentation, catalase and coagulase tests. Anti-staphylococcal agents for the detection of drug-susceptibility patterns were penicillin G (10 units), oxacillin (1 µg), cefoxitin (30 µg), ampicillin (10 µg), vancomycin (30 µg), erythromycin (15 µg), tetracycline (30 µg), and clindamycin (2 µg). Of the fifty-one isolated presumptively identified staphylococcal species, 92% (n=49) were identified as *S. aureus* and 4% (n=2) as *S. epidermidis*. The prevalence of nasal colonization of *S. aureus* and *S. epidermidis* among the study populace was 59% and 2.41%, respectively. Eighty-two percent (n=42) of the *S. aureus* isolates exhibited susceptibility to tetracycline, while 98% (n=48) exhibited resistance to ampicillin. One hundred percent (n=2) of the *S. epidermidis* isolates exhibited susceptibility to erythromycin and tetracycline, and resistance to penicillin G and ampicillin. Multidrug-resistant (MDR) strains were phenotypically determined based on non-sensitivity to two or more of the different antimicrobial classes. Sixty-one percent (n=31) of *S. aureus* isolates and 50% (n=2) of *S. epidermidis* were MDR strains. Of these staphylococcal isolates, 54.8% (n=17) were resistant to antimicrobials belonging to Penicillins and Glycopeptides with one isolate being *S. epidermidis* and 16 *S. aureus*. No significant association between multidrug-resistance of *S. aureus* and *S. epidermidis* and the risk factors was observed among the study population ($p>0.05$), however, it was observed that those who bathed and washed more often were more likely to have both nasal colonization and multidrug-resistance of *S. aureus* and *S. epidermidis*.