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Phenotypic and genotypic determination of nasal staphylococcus aureus and mrsa carriage in trainee students of health services vocational school

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Background: Methicillin-resistant *Staphylococcus aureus* (MRSA) are an important bacterial pathogen, resistant to beta-lactam antibiotics and are frequently isolated severe infection in hospital settings. It has been reported that long-term hospitalized individuals, such as health workers and medical students with high chances of carrying these strains, may be potential sources of nosocomial infections.

Objectives: In our study, it is aimed to investigate epidemiologically phenotypic and genotypic state of carriage which occurs before and after the laboratory internship. In addition, the difference between phenotypic and genotypic methods will be examined.

Material and Methods: Nasal swab samples collected from 180 trainee students before and after the laboratory internship period at Medical Laboratory Department without any health problems between in 2014 and 2016. Phenotypically for conventional methods and genotypically for real-time PCR were used to detect *S.aureus* and MRSA.

Conclusions: Nasal *S.aureus* carriage was found 12 (6,66%) and 21 (11,66%) of the samples taken before and after the internship period respectively. Nasal MRSA carriage was found 3 (1,66%) and 5 (2,77%) of the samples taken before and after the internship period respectively. During the 14-week internship period (one day per week), both *S.aureus* and MRSA carriers amount increased in trainees. All phenotypic results also confirmed by real-time PCR. As a result, our results suggested that colonization of this bacteria in the hospital environment should be improved and caution should be taken in terms of nosocomial infections.

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