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Noise Exposure Assessment in Laboratories

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Structured Abstract

Background: Noise exposure can harm students, laboratory's workers and lecturer emotionally and physically. The identification of the sources of noise pollution in the labs and establishment whether the levels are above acceptable, standard or low were carried in this study.

Methods: In this study, ten machines from three laboratories from Faculty of Applied Sciences were chosen to conduct noise exposure monitoring using calibrated Larson Davis sound level meter using sampling technique provided by ICOP. A set of survey were carried out to determine relationship between noise exposure and student health. The data were examined using SPSS software for Pearson correlation analysis. Noise mapping was developed.

Results: The results showed that there are two machines exceeding NEL > 85 dBA which are 94.6 dBA were produced by rotor spinning (RIETER R20) from textile texting laboratory and 86.5 dBA produced by Vacuum Former 1820 from polymer processing laboratory. Next, there are significant relation and strong relationship between noise exposure with noise perception, and noise exposure with annoyance. Noise mappings were developed and there are various coloured zone each laboratory from all red colored zone, mixed red, yellow and white zones and lastly all white zones.

Conclusion: There are two machines exceeding (NEL > 85 dBA) while others are below noise exposure limit. There is strong relationship between noise exposure and student health. One laboratory was observed to have a red-colored zone on the noise mapping.

Keywords: Noise level, laboratory, student health

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