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Vieira da Silva, Manuela; Oliveira, Rui; Rodrigues, Matilde; Nunes, Mafalda;
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(ESTSP-IPP)

**Scientific Area of Environmental Health of
Allied Health Sciences School of Polytechnic Institute of Porto**

Rua de Valente Perfeito, 322
4400-330 Vila Nova de Gaia
Porto - Portugal
t. +351 222 061 000
f. +351 222 061 001
e. geral@estsp.ipp.pt
w. www.estsp.ipp.pt

Sound exposure of garage rock bands musicians

Authors: João Almeida¹, Daniel Silva², Paulo Carmo², Paula Neves^{1,3}, Matilde Rodrigues¹

1 Research Centre on Environment and Health, Allied Health Sciences School of Polytechnic Institute of Porto, Portugal

2 Department of Audiology, Allied Health Sciences School of Polytechnic Institute of Porto, Portugal

3 Department of Environmental Health, National Health Institute, Dr. Ricardo Jorge, Porto, Portugal

INTRODUCTION:

Previous studies have been shown that musicians are exposed to high sound levels in the course of rehearsals and performances (Rodrigues *et al.*, 2014), which can be the source of hearing damages (Jansen *et al.*, 2009). However, other musical groups can also be exposed to high sound levels, as is the case of the garage rock bands musicians. This particular group of musicians, due to the style of the music played, can be exposed to dangerous sound levels. This situation can be even worse if considered the conditions of the rooms where the rehearsals and performances are being done. In fact, in most of cases, rock musicians play in rooms with small dimensions and with poor acoustic conditions. Despite the importance of this issue, few studies analyzed this issue, particularly integrating two important issues, the sound exposure and to hearing damages.

OBJECTIVES:

This study aims to analyse the sound exposure of garage rock bands musicians and to analyse their hearing damages.

MATERIALS AND METHODS:

Three garage rock bands were analyzed, including a total of nine musicians. All the band musicians were evaluated with an acoustic dosimeter during the entire rehearsal. Values of equivalent continuous sound pressure levels ($L_{p,A,eqt}$), peak sound pressure level ($L_{p,Cpeak}$) and octave frequencies were measured. The rooms where the rehearsal was performed were characterized and the isolation index determined. At the final of the rehearsals a questionnaire to analyze the perception of noise exposure, the use of hearing protection and health effects was applied to each musician. The level of hearing loss was also analyzed. In view of this, an air tone audiogram was then carried out, where hearing thresholds were tested at high frequencies at 12000hz.

RESULTS AND DISCUSSION:

The results of this study show the analyzed musicians are exposed to high sound levels in the course of rehearsals. Values of $L_{p,A,eqt}$ higher than 100 dB(A) were found for all musicians and $L_{p,Cpeak}$ values higher than 135 dB(C) too. The rooms presented poor acoustic conditions, where most of them were small, with the use of egg cartons as absorption material on the wall and ceiling, which has been referred as inadequate material for this purpose. Furthermore, as no sound reduction material or protection was used to the drums, amplifiers had to be used to the other instruments. The results also showed that tinnitus occurs with high frequency, and some musicians presented a certain level of changes in hearing threshold in the high frequencies.

CONCLUSION:

The results obtained in this study reflect the need to implement measures to prevent and control exposure levels of garage rock bands musicians and increase their awareness of the risks to which they are subject. In fact, these musicians are in a critical risk situation, particularly considering the high number of hours that they spend in the rehearsals and concerts.

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