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Venue-based hearing conservation strategies : reducing the risk of music induced hearing loss.

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Abstract

Background: During live concerts attendees are exposed to excessive high intensity sounds for durations considered dangerous to the auditory system. Thus, regular live music concert attendees are at risk for developing Music Induced Hearing Loss (MIHL) due to their recreational habits. Although MIHL is preventable, current hearing conservation is limited at live music venues. As personal hearing protection is poor within this community, a need for alternative hearing conservation strategies is evident.

Method: The objectives of this multi-method quantitative research study was to determine whether venue-based hearing conservation strategies in live music venues are a plausible means of reducing the risk of music induced hearing loss. Four live rock and heavy metal music venues in Johannesburg (South Africa) were included in the study. The current venue-based hearing conservation strategies as well as the acoustic and structural characteristics of these venues are described. In addition, the Sound Pressure Levels (SPLs) were measured throughout the venues. The variance of the mean SPLs between different areas within these venues were then calculated and effects of the structural characteristics on the variance of the sound levels within the venues were determined.

Results: The results indicated that hearing conservation including awareness programs and availability of Hearing Protection Devices (HPDs) are not currently occurring in the music venues. Music venues further do not comply with the OHSA (2003) regulations nor are they compliant in terms of the acoustic and structural recommendations for reducing the intensity levels in music venues. Statistical analysis indicated at least one pair of significant differences in the mean SPLs recorded in the different areas in each venue. Results further indicated trends in the variance of intensity levels between different areas confirming a positive relationship between each of these five trends and the variance of sound levels. Thus,

this study indicates that venue-based hearing conservation strategies may be a plausible means for reducing the risk for MIHL in attendees at live music venues.

Implications: Implications of this study are discussed in relation to clinical and practice guidelines for both audiologists, and occupational health personnel, whilst the need for changes in legislation are highlighted.

Keywords*:* Music induced hearing loss, hearing conservation, recreational noise exposure, live music venues, venue-based hearing conservation, structural characteristics.