

RISK PERCEPTION AND HEARING PROTECTION USE

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Introduction The study of the relationship between work and health implies an acute identification of all occupational factors involved, as well as the associated effects, either positive or negative, in workers. For this purpose, it is absolutely necessary to carry out practical studies in occupational environments so that the more important predictors of occupational risk can be identified. Within the multiple risk factors in occupational settings, noise exposure, because of its incidence in industrial environments (NIOSH, 1998; Arezes, 2002), acquires particular importance. Although, occupational noise exposure has been extensively studied over the last years, it still represents one of the main causes of occupational disease, namely occupational hearing loss, which involves, according with official data, circa 25% of all handicapped workers (EASHW, 1999). Noise exposure has multiple effects, both in hearing, which is legally recognized, and in other worker health issues, such as, the psychological effects.

In spite of the abundance of literature on occupational noise exposure, the individual perception analysis and its implications on workers' behaviour has been a minor research area (Arezes, 2002). By observing workers' practices it is possible to verify that those, even doing the same activities and in the same workplaces, show different perceptions about the risks they are exposed to (Stewart *et al*, 1998). In the case of noise exposure, such differences are even clearer. Thus, it is frequent to find workers sharing the same workplaces, however with divergent points of view concerning noise exposure risk, or at least, concerning noise exposure effects. Such differences have serious implications on workers' behaviour, for example in the use of hearing protection devices.

Although there are several approaches explaining workers' behaviour in noise exposure, these rarely include quantitative variables related to central factors in noise exposure, such as, noise exposure levels and the workers' hearing loss.

Methods The present study – focusing on a sample of 516 industrial workers exposed to noise pressure levels greater than the Portuguese action level (85 dB(A))- aims the analysis of the relationship between individual risk perception and the use of hearing protection devices.

For this purpose, and considering the literature review (Lusk *et al.*, 1995; Brady, 1999), a conceptual model for HPD use was developed. This conceptual model includes 3 main types of factors: individual factors (age and individual permanent hearing thresholds), contextual factors (noise exposure pressure levels, safety culture or climate, and training), and perceptual-cognitive factors (individual risk perception, individual noise effects perception, and outcome value). With the purpose of noise exposure characterisation, a daily personal exposure level evaluation was done. Based on the literature review, a questionnaire was developed in order to evaluate the qualitative considered variables, namely, individual risk perception, perception of noise effects, expectancy on results and outcome value, safety culture and risk behaviour. Simultaneously, another questionnaire was applied aiming at characterising the occupational noise exposure profiles, as well as the use of hearing protection devices. Workers' permanent threshold shifts were measured through a pure tone audiometric testing at the beginning of each shift.

Results and Discussion The multivariate data analysis of the obtained results, through the application of path analysis, has shown that individual risk perception and other perceptual-cognitive factors are important predictors of workers' behaviour, such as the use of hearing protection.

These factors are essentially, mediator factors, i.e., factors that mediate the effects of other important variables in the endogenous variable.

Beyond, this mediator factors, another type of factors represent an important role in what concerns to the use of Hearing Protection Devices. These include individual factor such as age, and contextual factors, such as, the safety culture of the enterprise, the exposure noise levels, and the participation in training.

According to the obtained results individual risk perception of occupational noise exposure is an important issue in what concerns to safety behaviours, namely in the use of Hearing Protection Devices. Workers seem to use Hearing Protectors Devices based on their perceived level of risk, but it also seems, that they are poor judges of the current level of risk.

Therefore, the promotion of Hearing Protection use in occupational settings, should consider two main aspects, namely, the promotion of workers' risk perception and the removal of barriers to compliance, such as uncomfortable devices, interference with oral communication, and organizational cultures that do not value hearing preservation.

Furthermore, these results do suggest that risk perception should be considered in the design and implementation of any Hearing Conservation Program, namely, in the development of training programs.

Keywords

Noise, Exposure, Hearing Protection Devices, Perception, Risk, Safety.

References

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