Annoyance and Health Effects of Entertainment Noise

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Abstract: There is no doubt that over the past twenty years awareness in the possible adverse annoyance and health effects which can result from entertainment and leisure activities has increased, and the topic is becoming more worthy of research effort in its own right. Indeed, apart from noise induced hearing loss there appears to be a lack of in depth research from which unequivocal quantitative conclusions can be drawn. Whilst damage to hearing from certain activities has been established, in general non-auditory health effects are not apparent although annoyance effects and provoked violence are becoming increasing causes of major concern.

INTRODUCTION

The problems associated with exposure to noise from recreational and musical activities per se, often generically referred to as entertainment or leisure noise, have not been as actively driven by the legislative process as have other occupational noise exposure and annoyance effects. In consequence the issues involved have been less clearly identified, quantified and therefore researched at anything other than a relatively superficial level. This is not to say that the research has been trivial, but rather to stress that, as the UK Medical Research council (MRC) Institute of Hearing Research stated in their report published in 1985 (1), 'Several gaps in the literature are noted where properly designed research is needed. The outstanding need is for large random sample whole-population survey of exposure rates and patterns for leisure noise in general, and amplified music in particular.' It is by no means clear that any significant progress has been made towards meeting this research goal in the decade since the MRC report was published, although important review contributions have more recently been made by the Health council of the Netherlands in 1994 (2). There is no doubt that awareness in the possible adverse outcomes which exposure to leisure noise can cause has increased, particularly in respect of reported cases of provoked violence.

NOISE SOURCE CLASSIFICATION

For the purposes of this discussion leisure noise can be grouped into two main categories, recreational and musical. Specifically excluded from discussion will be the effects of noise exposure encountered during occupational activities and from casual and habitual non-specific everyday living activities. These include exposure to transportation, industrial and residential noise, exposure at home from indoor and outdoor activities, and exposure to noise whilst travelling. Some effects happen to people by virtue of their voluntary participation in activities, for example damage to hearing and non-auditory effects on health. Other effects occur following noise generation by third parties which affect passive listeners and usually take the form of annoyance and provoked violence.

Recreational activities essentially break down into sporting (shooting and sports guns, motorsport including snowmobiles, watersport including diving, and stadia based) and pastime (toys and games, powered model aircraft, fireworks, outdoor and DIY) activities. Musical activities break down in to listening (discotheques, amplified rock/pop music, light/classical music, personal cassette players) and performing, (rock/pop musicians, other music) activities.

ADVERSE REACTIONS

The types of leisure based activities which can possibly give rise to the risk of damage to hearing have been well documented (1)(2) and reports of the incidence of noise induced hearing loss in young people, including those detected during pre-service medicals or special surveys, do not suggest the incidence of such effects has increased significantly over the last twenty years. However, there is no escaping the confirmed fact that no authoritative comprehensive study has ever been carried to determine and quantify the hearing damage risks likely to occur from noise exposure incurred during leisure activities. Indeed, international recommendations on the need for the
reduction of current hearing conservation criterion level, have not been substantiated (3). Any conclusions that are
drawn must therefore, be taken as indicators of possible problems rather than providing definitive statements of the
risks involved.

Nevertheless, it has been clearly established that noise from shooting and sports guns does have the potential to
cause noise induced hearing loss if hearing conservation procedures are not invoked. Bearing in mind the publicity
that has been generated by such activities there is really no excuse whatsoever for people, in general, not being
aware of the risks involved. This is not the case with motorsport activities where the noise exposures are high
enough to warrant concern but hearing conservation measures are not usually brought to the attention of
participants. Reported cases of hearing damage to children following exposure to the noise of percussive and
explosive toys including fireworks, is particularly important to note, and public awareness needs constant
reinforcement on this issue. The majority of documented cases of noise induced hearing from leisure noise relate to
rock/pop music, where, provided the exposure times are long enough and spread out over several years, the risks
have been clearly established. The problems are present both from regular listening through personal cassette
players and from attending live performances at discotheques, and risk is critically dependent on the longer
integrated noise exposures that can be accrued. It is also considered most unlikely that noise exposure incurred
during leisure activities would give rise to clearly identifiable adverse non-auditory effects on health.

However, and importantly, there is an increasing database of evidence, principally reported in the national press, to
suggest that severe acts of physical violence, often leading to death, are provoked by noise annoyance emanating as
a result of the pursuit of leisure activities. Such dramatic outcomes must not be underestimated, and the population
at large should be alerted that by following their natural instincts in trying to solve or mitigate such problems
themselves could lead to a tragic outcome. These cases undoubtedly provide the most positive evidence of severe
indirect adverse effects of leisure noise on health.

CONCLUSIONS

Having established that certain leisure based activities, providing noise exposure patterns are integrated over
sufficiently long time periods, can give rise to the risk of damage to hearing and that annoyance reactions can
provoke violence, the question that has to be asked is what can be done about it? The answer is sensibly probably
very little, apart from ensuring that adequate public awareness and educational programmes are implemented. It is
also felt that no amount of regulation would be of helpful in the control of excessive leisure noise expose if the
means to enforce them were not made available. However, bearing in mind the relatively low integrated exposures
which emanate from leisure noise activities it is felt that publicity and educational programmes which alert
participants to the possible risks of certain identified activities, together with mediation procedures in cases of
reported annoyance are helpful and progressive ways forward.

This simple advice is probably of more value than trying to introduce and enforce legislation, directives and codes
of practice to control the noise levels at source. There comes a time when people will have to assume responsibility
for their own actions, basing their decisions on educational and awareness programs sourced from the best available
scientific evidence.

REFERENCES

(1) Medical Research Council Institute of Hearing Research. Damage to hearing arising from leisure noise: A
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(3) Robinson DW, Lawton BW, Rice CGR. Occupational hearing loss from loss from low level noise. HSE

780