

# Noise Induced Hearing Loss among University Students Using Portable Entertainment Player

**Keywords:** NIHL; Hearing; Adolescent; Students

## Abstract

The current study investigated self-assessment of noise induced hearing impairment among university students using portable entertainment player. In the present study a total of 452 university going students in the age range of 20 to 28 years were recruited. The current study showed that a good percentage of portable entertainment player users are at risk of noise induced hearing loss. The present investigation also revealed that even though participants were knowing the harmful consequences of listening music at higher volume but they were unaware about the hearing care professionals. Tinnitus, vertigo, headache and poor quality of sleep were also observed among adolescent using portable entertainment player.

## Introduction

Noise induced hearing loss is a noteworthy public and social health problem. Ample of the efforts to reduce the risk of Noise Induced Hearing Loss (NIHL) have focused on adults. Acquaintance to loud music, among adolescent, is a major area of concern. Nowadays, youth expose themselves to loud music for longer duration of time and they are not aware of harmful consequences. Noise induced hearing loss among children and adults have been connected to recreational noise and leisure activities [1-2]. A study done by Lee et al., reported that continuous use of ear phones for 3 to 4 hours can cause 10dBHL increase in the hearing threshold [3]. Regular use of portable entertainment player such as cell phone, can damage hearing [4]. Nowadays in society, adolescent use earphone not only for listening to music but also for abolishing the environmental unwanted noise and to make themselves indulge in listening music to avoid surrounding cocktail noise. Listening to loud music for longer duration of time with portable entertainment player not only cause hearing loss but also to ear infection, dizziness, fatigue ear, ear pain and tinnitus [2].

From the present literature, harmful consequence of listening music at louder volume was observed. Current literature also revealed lack of knowledge/awareness among adolescent regarding damaging significances of listening music at higher level. There was dearth of literature regarding self-assessment of noise induced hearing loss among adolescent using portable entertainment player.

The present investigation aimed for self-assessment of noise induced hearing loss among adolescent using portable entertainment player, knowledge and attitude toward noise induced hearing loss and annoyance evaluation. The objectives of the study were to find out volume of portable music player, number of hours listening to music per day, quality of hearing, quality of hearing over phone,

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tinnitus among users, knowledge of ear protection devices, awareness of harmful effect of listening music at higher volume, presence of vertigo, quality of sleep and professional to be visited.

## Method

A total of 452 university going students in the age range of 20 to 28 years (mean age: 24.25 years) were recruited for the present study. Informed written consent was taken from all participants of the study. All the participants were regular user of portable entertainment player from 6 to 8 years. Participants with middle ear infection were excluded from the study. There were 17 questions related to self-assessment of noise induced hearing loss, knowledge and attitude toward noise induced hearing loss, knowledge regarding ear protection devices and presence of audiological and otological condition other than hearing loss. These questions were adopted from similar studies [1,4]. All the questions were in English language and reverse translation was carried out make sure that the meaning of the content remains the same. These questions were proofread by 10 native speakers of Hindi as well as having knowledge of English too. Later, the same questionnaire was used for the participants under close supervision of two audiologists having master degree in Audiology. Questions related to self-assessment of noise induced hearing loss includes 'quality of hearing', 'quality of hearing over phone', 'quality of hearing in crowd', 'do people often indicate that you are talking too loudly'. Questions regarding knowledge and attitude toward noise induced hearing loss includes 'do you know that listening music at higher volume can cause hearing loss', 'can young people lose hearing', 'in case of hearing loss which professional you should contact'. A Questions related to knowledge regarding ear protection devices includes 'use of hearing protection devices in loud noise situation', 'do ear protection device effective if used'. To know the presence of audiological and otological condition other than hearing loss, questions were 'have you ever felt vertigo after a long exposure to loud music', and 'tinnitus/buzzing sound in ear'. For annoyance evaluation, questions like 'do you feel headache' and 'quality of sleep' were included in the questionnaire. The percentages and proportions of different categories of questionnaires was used to analyze the data.

## Results and Discussion

The data were analyzed along with descriptive statistics, percentages and proportions of the study subjects, in context to a response. In the present study, 47% of the participants reported the quality of hearing as excellent, whereas, 34% and 18% of the participants reported it as above average and average respectively. For the question 'hearing over phone' 72% of the participants reported no difficulty, whereas, 24% reported that they miss some conversation and 4% of the participants miss full conversation. For 'hearing in crowd', only 39% of the population reported no difficulty, whereas, 55% of the participants miss some conversation in crowd. The present study showed that 17% of the participants keep the volume of TV louder, whereas, 76% of the participants keeps the volume of TV at medium. In the present study, 32% of the population reported that sometime people indicates that he/she is talking too loudly, whereas, 20% of the participants always talk too loudly. From the above finding, it can be observed that a good percentage of the participants indicate the risk of noise induced hearing loss.

Questions regarding knowledge and attitude toward noise induced hearing loss, 92% of the participants knows the adverse effect of listening music at higher volume, whereas, 25% responded no for the question 'can young people lose hearing'. For the question 'in case of hearing loss which professional you should contact', 51% and 17% of the participants prefer otolaryngologist and neurologist, only 28% of the participants choose audiologist. Questions related to knowledge regarding ear protection devices, 58% of the participants have never used ear protection devices, whereas, 73% of the participants were unaware about the usefulness of ear protection devices. From the present outcome, it can be inferred that most of the participants were knowing the harmful consequences of listening music at higher volume but they were unaware about the hearing care professionals.

The finding of the present study also showed that 40% of the portable entertainment players were having tinnitus, 26% of the participants faced the episodes of vertigo, 82% of the participants reported headache sometime. Question regarding quality of sleep, only 37% of the participants reported excellent sleep, whereas, 52% and 10% of the participants reported average and poor quality

of sleep. The current data showed a good percentage of portable entertainment player users faced tinnitus and vertigo and most of the participants were having headache. Annoyance evaluation showed more than 50% of participants were not getting a good quality of sleep. A study done by Sanju and Kumar in 2016 on traffic police and bus driver revealed negative significances of noise exposure which shows these individuals were at risk of hearing-related problems [5]. Himanshu and Mohit in 2018 reported that bullet riders are at risk of noise induced hearing loss [6]. They also showed annoyance among bullet riders and lack of awareness about hearing protection devices.

## Summary and Conclusion

The current investigation revealed that a good percentage of portable entertainment player users are at risk of noise induced hearing loss. The present study also revealed that even though participants were knowing the harmful consequences of listening music at higher volume but they were unaware about the hearing care professionals. Poor knowledge about the ear protection device is one of the major finding of present study. Tinnitus, vertigo, headache and poor quality of sleep are also found among portable entertainment player users.

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