



Original Article

The Prevalence of Using Personal Music Player and Listening Habits in Iranian Medical Students

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ABSTRACT

Background: Exposure to loud music from sources such as portable music players (PMP), especially among adolescents, can lead to noise-induced hearing loss. The aims of this study are as follows: 1) investigate the prevalence of headphone use in Iranian University students by assessing their behavior, 2) determine the type of headphones used, and 3) ascertain the type of music player used.

Methods: In this cross-sectional descriptive study, 250 students from Hamadan University of medical sciences and health services were randomly selected to fill out a questionnaire.

Results: Overall, 91.2% of students were found to use headphones, 10.4% of which used headphones more than 1 hour a day, and 52% of them used volume setting higher than three fourths of the output capacity. The most common music player was a mobile phone, and the most common headphone type was the inserted type. Tinnitus was reported among 34.4% of users following the use of personal music player.

Conclusion: The use of personal music players amongst students was found to be very high in the study setting.

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Introduction

The military and various industries are known sources of high noise. But the largest potential source of noise exposure outside these environments is exposure to music. This could include listening to live music through amplifiers and speaker systems, listening through portable music players (PMP), and actually playing music. By far, the largest contributor to potential hearing loss is PMP [1,2]. PMPs produce very strong sound tones, and their maximum sound level can reach up to 78- 136 dB [3]. Some studies have shown PMP maximum sound level ranging from 96 to 105 dBA [4], while other studies have reported a range from 101 to 107 dBA for the maximum sound level of portable devices. Some devices can reach up to 125 dBA due to the device's

output voltage, earphone sensitivity, recorded music level, and the earphone fit [5]. This sound level is very strong, and in the United States, the standard maximum noise level ranges from 80-90 dBA [1].

In noisy environments, listeners are especially likely to choose high volume settings [6]. Studies have indicated that prolonged exposure to up to 60% of maximum volume for more than an hour can cause noise-induced hearing loss. Moreover, the subtlety of electronic gadgets does not disturb bystanders, which enables users to listen to music uninterrupted for prolonged periods [7]. In other words, the prevalence of using it in world is very high. Vogel has reported that 89.9% of Dutch secondary school adolescents (12-19 years old) used headphones to listen to music. Kim reported that 94.3% of Korean adolescents (13-18 years old) used personal music players. Rekha found that 83.1% of medical students in coastal South India used personal music devices regularly. Ahmed indicated that 82% of students at University of

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Toronto at Mississauga (16-25 years old) owned a portable music device [8]. The present study aims to investigate the prevalence of using headphones amongst Iranian University students by assessing their behavior, the type of headphones used, and the type of music player used.

Methods

This descriptive study was carried out in Hamadan, Iran in 2012. 250 students from Hamadan University of medical sciences were selected and asked to fill out a questionnaire, which was prepared after an extensive literature search. They were selected by a simple random sampling method. Prior to completing the questionnaire, participants were given information about the study. The questionnaire included 20 questions, and was divided into five parts which described a) demographic details, b) headphone usage, c) usage behavior, d) self-reported listening levels and items determining listening level and listening condition, and e) symptoms following headphone use (tinnitus).

The content validity of the questionnaire was assessed by Lawshe's technique, and Content Validity Ratio (CVR) was reported at 0.89. Cronbach's alpha for research instrument score was 0.82, indicating a high degree of internal consistency and homogeneity between items.

The data was analyzed using SPSS version 12.0. The descriptive measures were mean, standard deviation, percentages, and frequencies.

Results

The sample consisted of 45.6% male participants. 95.6% of the sample was single. The mean age was 21.14 (Range 18-23). Of the 250 participants, 108 (43.2%) were between the ages of 18-20, 129 (51.6%) were 20-25 years of age, and the remaining participants were older than 25. The characteristics of the sample are presented in Table 1.

Table 1: Characteristics of the sample (n=250)

Variables	%	n
<u>Faculty</u>		
Medicine	19.6 %	49
Dentistry	11.2 %	28
Pharmacy	11.2 %	28
Paramedic	14.8 %	37
Rehabilitation Sciences	16 %	40
Nursing and Midwifery	13.6 %	34
Health Sciences	13.6 %	34
<u>Residence</u>		
Dormitory	64.8 %	162
Home	35.2 %	88
<u>Semester</u>		
1 st	27.6 %	69
2 nd	6.8 %	17
3 rd	21.6 %	54
4 th	7.2 %	18
5 th	21.6 %	54
6 th	5.6 %	14
7 th	4.4 %	11
8 th	2.4 %	6
9 th	2.8 %	7

Overall, 91.2% reported using PMP, 22.4% of which used it every day. 54.1% listened for less than one hour, 31.9% for 1 to 2 hours, 10.5% for 2 to 3 hours, 1.7% listened 3 to 4 hours, and 1.3% listened to music more than 4 hours per use.

46.4% had used headphone for more than 1 year. 20.8% of students used headphone before sleeping, 4% used it while studying, and 4.4% used it while walking and exercising. 10.5% set the music player volume to a very high level, 46.5% high level, 15.8% moderate level, 19.7% soft level, and 6.6% very soft level.

74.7% used inserted earphones, and 25.3% used over-the-ear headphones. The most common music player device was the cell phone. A Walkman was used by 75.9% of participants. In addition, 15.4% used a PC, 4.4% used an MP3 player, and others used different devices. 4.8% used a monaural headphone, most of which used it in their right ears. 37.7% reported experiencing hearing symptoms following using personal music player.

Discussion

The results of the present study indicated high prevalence in the use of personal music players amongst Iranian students (92.1%), which is higher than that conducted by Ahmed in the University of Toronto at Mississauga students (82%) [8], as well as Rekha, who studied medical students in coastal South India (83.1%) [7]. This higher prevalence in the present study may be the result of the inclusion of anyone who used headphones to listen to the music, so that someone who used a PC as a listening device would be included. Although a PC isn't a PMP, when used as a listening device through headphones, it is considered to be a personal music player.

45.9% of participants reported using personal music players for more than one hour. Most of the participants (75.9%) used cell phone Walkman as a listening device. In the study conducted by Kim, 78.0% used MP3 players [3], and in the study conducted by McNeil, most of the participants used iPods [4]. Ahmed's research indicated that 42.7% used MP3 players [8]. We think that cell phone Walkman has an important role in the higher prevalence of using personal music players among Iranian students since it is not a device used specifically for music listening, but also has other applications. Their compact size makes these devices more preferential to students. Most of the participants (57.0%) chose a volume setting of more than three fourths of the device's output capacity. These students practice a risky behavior. In a study conducted by Vogel, 48.0% of subjects chose a volume setting of more than three fourths maximal output [6]. Ahmed reported that most of the students chose mid-level volumes, and only 11.33% chose high volume levels [8]. Also, Rekha found that 35.1% chose high level volumes. 37.7% reported experiencing hearing symptoms following the use of a personal music player [7]. This finding indicated that hearing symptoms are lower than Muchnic's study (49%) [9], and higher than Ahmed's study (31.4%) [8].

Conclusion

Overall, the prevalence of personal music player use in Iranian students is very high, and most of the students practice risky behaviors regardless of the type kind of personal music players they use. We believe cell phones have an important role in this high prevalence.

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Conflict of Interest: None declared.

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