



A Smartphone Based Assessment of Hearing Impairment among Students at Selected Degree Colleges of Vijayapura

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ABSTRACT

Background of the study

The burden of hearing impairment in India is substantially high, largely preventable, and avoidable. The present study aimed to estimate the prevalence of hearing impairment using a Smartphone-based tool among degree students and to study the factors associated, including personal audio device usage in degree colleges

Aim of the study: Assessment of Hearing Impairment among Students at Selected Degree College

Methodology:

Cross Sectional study is conducted among Degree College students at selected degree colleges at Vijayapura. Total 200 students were selected by using Convenient Sampling technique.

Results:

Regarding demographic variables, 37.5% of them were in the age group 21 years, 62.5% of the respondents were male students, 75% of the respondents were Hindu, 62.5% of the respondents were having nuclear family, 35% of the respondents were studying in BA, 50% of the respondents were studying in III Year and 62.5% of the respondents were using Audio Device More than 5 hours.

Prevalence of hearing impairment among the degree college students out of 200, 37.5% had hearing capacity above 75, 54.5% had hearing capacity that is 50-75 and only 8% had the hearing capacity that's below 50. It concludes that Prevalence of hearing impairment that is 8% among degree college students due to use of mobile phones.

Factors associated with use of Smart phone among the degree college students out of 200, 27.5% had mid level, 62.5% had Moderate level and only 10% had the Sever Level. It concludes that some factors associated with use of smart phone for the prevalence of hearing impairment.

Correlation between hearing impairment and factors associated with use of smart phone. There is a Positive correlation

There is no Association between hearing impairment and factors associated with use of Smart phone among college students with the selected socio demographic variables at 0.05 level of significance.

Key Words:

Prevalence, Smart Phone, Associated factors and hearing impairment

INTRODUCTION .

Over 430 million people all over the globe require rehabilitation to address their disabling hearing loss. Globally, one in every ten people will have disabling hearing loss by 2050 and over 1 billion young adults are at risk of avoidable hearing loss due to unsafe listening practices globally. Failure to act will impact both the health and well being of those affected and financial implications. The prevalence of hearing loss in South East Asia ranges from 4.6% to 8.8%. The burden of hearing impairment in India is also substantially high. The noise induced hearing loss remains highly prevalent in occupational settings and has recently been caused by social noise exposure such as personal music players. Listening habits toward loud music may even promote behaviors that could cause damage to the cochlea and may cause both temporary or permanent hearing loss.

The noise-induced hearing loss remains highly prevalent in occupational settings and has recently been caused by social noise exposure such as personal music players. Recent technological advances in tools such as Smartphone-based assessment have proved to identify ear diseases and hearing loss with limited training and resources. Although the Smartphone applications were validated, many were not studied independently in a field setting, and validation studies were desirable for each available application for hearing assessments.

The majority of colleges managed to switch to online classes teaching during the COVID 19 pandemic; further increasing the chances of earphone usage. There is a lack of the literature on the burden of hearing impairment among students in the Indian context and the applicability of smartphone based screening assessments. Hence, the present study was conducted to estimate the prevalence of hearing impairment using a smartphone based audiometric tool among students and study the factors associated, including personal audio device usage in a college.

PROBLEM STATEMENT

A Smartphone Based Assessment Of Hearing Impairment Among Students At Selected Degree Colleges Of Vijayapur

OBJECTIVES

- 1.To estimate the prevalence of hearing impairment among the degree college students
- 2.To assess the factors associated with use of Smart phone among the degree college students.
- 3.To find out the correlation between hearing impairment and factors associated with use of smart phone among degree college students.
- 4.To find out the association between hearing impairment and factors associated with use of Smart phone among college students with the selected socio demographic variables.

HYPOTHESIS:

Will be tested at 0.05 level of significance

H1:There will be a significant correlation between hearing impairment and factors associated with use of smart phone among degree college students

H2: There will be a significant association between hearing impairment and factors associated with use of smart phone among degree college students with their selected demographic variables.

ASSUMPTIONS:

- Excessive use of mobile with earphones may lead to the hearing impairment.
- Personal audio device with loud voice may be one factor to cause the hearing impairment.

MATERIALS AND METHODS

Research Approach: Quantitative Research Approach

Research Design: Cross Sectional Design

Variables:

- **Research Variable** – Hearing impairment and factors associated with use of Smart phone
- **Demographic Variable:** Age, Gender, Type of degree, Year of study, Residence, Marital Status, History of screening for hearing impairment, Family history of hearing loss, Duration of ear phone using, Current history of ear infection etc

Setting of the study: Selected Degree Colleges at Vijayapura.

Study Population: Students studying In Selected Degree colleges of Vijayapura.

Sampling Technique: Convenient Sampling technique

Sample Size: 200 Students studying In Selected Degree colleges of Vijayapura.

Delimitation:

Study is delimited to

Who all are not using Smartphone by college students at selected degree Colleges of Vijayapur

Instrument to be used:

Section A-Demographic data

Section B

Part A- Hearing Impairment via-Hear WHO application

Part B- Semi Structured Questions to assess the factors influencing to use the excessive mobile

Data collection process:

- Prior permission will be taken from concerned authority
- Purpose of conducting study will be explained to study participants
- Administration of the tools to the adolescents

RESULTS**Section I: Analysis of Demographic Variables****Table No:1. Frequency and Percentage distribution of Students according to their Demographic Variables**

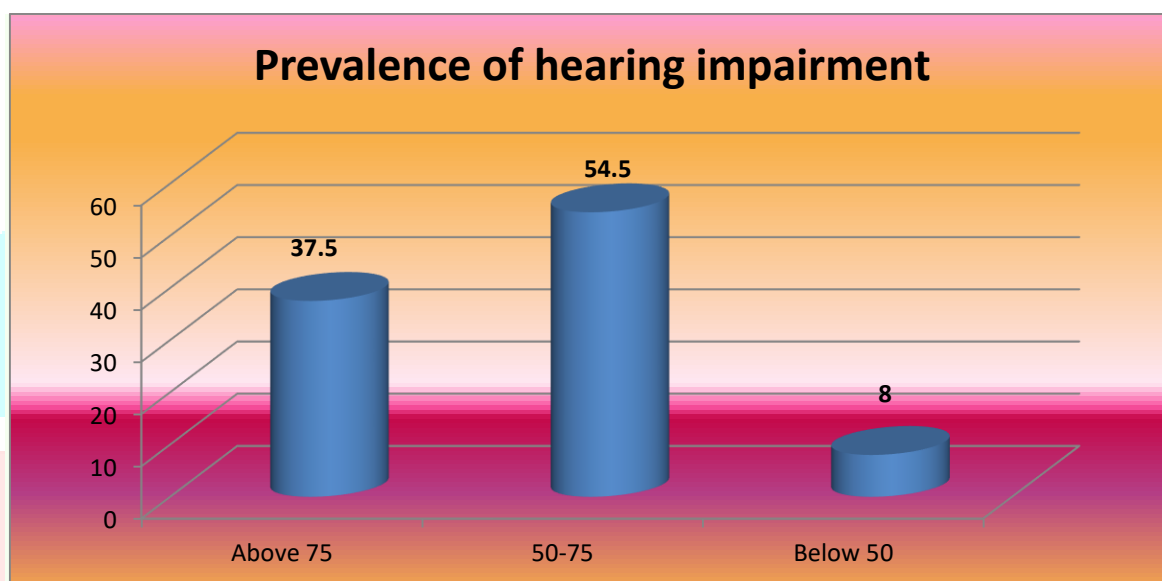
Demographic Variables	Frequency	Percentage
Age in Years		
19	25	12.5
20	50	25
21	75	37.5
22	50	25
Gender		
Male	125	62.5
Female	75	37.5
Religion		
Hindu	150	75
Muslim	25	12.5
Christian	25	12.5
Type of family		
Nuclear family	125	62.5
Joint Family	65	32.5
Single Parent Family	10	5
Stream of study		
BA	70	35
BSC	50	25
BCOM	50	25
BCA	30	15
Year of study		
I	45	22.5
II	55	27.5
III	100	50
History of screening for hearing impairment		
Yes	25	12.5
No	175	87.5
Current history of ear infection		
Yes	10	5
No	190	95
Current history of nose/throat infection		
Yes	20	10
No	180	90
Past history of head/ear injury		
Yes	15	7.5
No	185	92.5
Audio Device Usage		
Less than 5 hours	75	37.5
More than 5 hours	125	62.5

Section II: Analysis of prevalence of hearing impairment

Table No: 2. Frequency and Percentage distribution according to Prevalence of hearing impairment among the degree college students

Sl No	Hearing Category	Frequency	Percentage
1	Above 75	75	37.5
2	50-75	109	54.5
3	Below 50	16	8
Total		200	100

Above table reveals that regarding Prevalence of hearing impairment among the degree college students out of 200, 37.5% had hearing capacity above 75, 54.5% had hearing capacity that is 50-75 and only 8% had the hearing capacity that's below 50. It concludes that Prevalence of hearing impairment that is 8% among degree college students due to use of mobile phones.

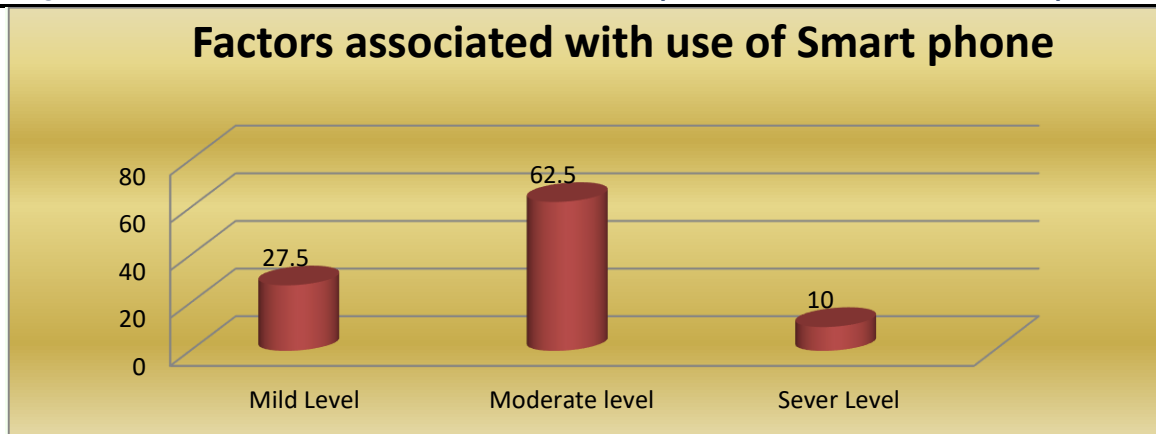


Section III: Analysis of factors associated with use of Smart phone

Table No: 3. Frequency and Percentage distribution according to Factors associated with use of Smart phone among the degree college students

Sl No	Factors associated	Frequency	Percentage
1	Mild Level	55	27.5
2	Moderate level	125	62.5
3	Sever Level	20	10
Total		200	100

Above table reveals that regarding Factors associated with use of Smart phone among the degree college students out of 200, 27.5% had mid level, 62.5% had Moderate level and only 10% had the Sever Level. It concludes that some factors associated with use of smart phone for the prevalence of hearing impairment.



Section IV: Analysis of correlation between hearing impairment and factors associated with use of smart phone

Table No: 4. Correlation between hearing impairment and factors associated with use of smart phone among degree college students.

Score	N	Mean	S.D	S.E	r-value
Hearing impairment	200	65.85	3.37	0.4356	+0.91
Factors associated	200	46.66	5.54	0.3277	

The above table reveals that correlation between hearing impairment and factors associated with use of smart phone. There is a Positive correlation

Section V: Analysis of association between hearing impairment and factors associated with use of Smart phone

There is no Association between hearing impairment and factors associated with use of Smart phone among college students with the selected socio demographic variables at 0.05 level of significance.

DISCUSSION

- Regarding age , out of 200, 12.5% of the respondents in the age of 19 years, 25% of them were in the age group of 20 years ,37.5% of them were in the age group 21years and 25% of them were in the age group 22years
- Regarding Gender, out of 200, 62.5% of the respondents were male students and 37.5 % students were female.
- Regarding religion, out of 200, 75% of the respondents were Hindu, 12.5% of the respondents were Muslim and 12.5% of the respondents were Christian
- Regarding type of family, out of 200, 62.5% of the respondents were having nuclear family , 32.5% of the respondents were having joint family and only 5 % of the respondents were having single parent family.
- Regarding stream of study,out of 200, 35% of the respondents were studying in BA , 25% of the respondents were studying in BSC , 25% of the respondents were studying in BCOM , and 15% respondents were studying in BCA.

- Regarding Class, 22.5% of the respondents were studying in I Year , 27.5% of the respondents were studying in II Year and 50% of the respondents were studying in III Year.
- Regarding use of audio device, out of 200, 37.5% of the respondents were using Audio Device less than 5 hours and 62.5% of the respondents were using Audio Device More than 5 hours.
- Prevalence of hearing impairment among the degree college students out of 200, 37.5% had hearing capacity above 75, 54.5% had hearing capacity that is 50-75 and only 8% had the hearing capacity that's below 50. It concludes that Prevalence of hearing impairment that is 8% among degree college students due to use of mobile phones.
- Factors associated with use of Smart phone among the degree college students out of 200, 27.5% had mid level, 62.5% had Moderate level and only 10% had the Sever Level. It concludes that some factors associated with use of smart phone for the prevalence of hearing impairment.
- Correlation between hearing impairment and factors associated with use of smart phone. There is a Positive correlation
- There is no Association between hearing impairment and factors associated with use of Smart phone among college students with the selected socio demographic variables at 0.05 level of significance.

RECOMMENDATIONS

- Comparative study can be done between rural and urban , Male and female
- Pre experimental study can be conducted with intervention
- An exploratory study can be done at various settings
- Study findings can be utilize in curriculum

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CONFLICT OF INTEREST-None declared

ETHICAL CLEARANCE- Ethical clearance certificate was obtained by institutional ethical committee.

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