

A Study to Assess the Effectiveness of Structured Teaching Programme On Knowledge Regarding Prevention of Health-Related Complications Due to Excessive Use of Bluetooth/Headphones Among Undergraduate Students in Selected College, Bangalore

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Abstract:

Hearing loss is a growing issue among young people due to lifestyle habits like excessive use of earphones and loud music. This irreversible hearing loss necessitates a focus on preventing hearing impairment associated with excessive use of portable music devices. A study in Bangalore assessed the pre-test knowledge and effectiveness of a structured teaching program on preventing health-related complications due to excessive Bluetooth/headphone use among undergraduate students. The results showed that 61.7% of participants had inadequate knowledge, 38.3% had moderately adequate knowledge, and none had adequate knowledge. However, after the structured teaching program (STP), 60% of students had adequate knowledge. The study concluded that promoting responsible listening habits could prevent premature damage to the auditory system. The study concluded that STP was significantly effective in improving undergraduate students' knowledge about preventing health-related complications due to excessive Bluetooth/headphone use.

Key words: Effectiveness, Structured teaching program, Bluetooth, Head phones, Undergraduates.

Introduction

In this new era our lifestyle has become faster due to urbanization and westernization. Busy lifestyle influences the adolescents to listen to music for prolonged period of time. It is one of the stress busters in the modern world. Adolescents are spending more time on music with earphones as they are unaware of the health hazards that can potentially occur.

Bluetooth/headphones is a wireless personal area networks is a wireless personal area networks communication. It is the most common method of sending and transferring data among a variety of devices. People are fascinated by the latest technology but it is moving ahead day by day, the technology popular among adolescents is the use of earphones which has increased dramatically in recent years. Many young students are addicted

to their earphones or head phone¹ among people of age 15 to 24, risky patterns of using earphones everyday listening through earphones was found to be common for a longer duration of time also during sleep or during the study,³ leaving everyone confined into comfort with many unknown bad effects on health like many body organs,¹ the brain, the ears and the eyes are exposed to a powerful field of electromagnetic radiation with possible adverse effects on these organs⁴ neglecting the fact that prolonged use can result in ear canal infection and damage hearing.

The name “**Bluetooth**” and its logo are trademarked by the privately held trade association named the Bluetooth Special Interest Group (SIG). The name Bluetooth was a code name used by developers of this wireless technology. But as the time past name Bluetooth Stuck.

Bluetooth is the wireless technology standard for transmitting fixed and mobile electronic device data over short distances. Bluetooth was introduced in 1994 as a wireless substitute for RS-232 cables.⁶ Second Bluetooth technical specification 1.0B released in 2000, 2.0 was higher than the allowable limits when compared to larger headphones. PMS output levels have been recorded to be as low as 80 dBA and as high as 121Db. Recreational noise-induced hearing loss (NIHL) can be immediate or take a long time to be noticeable, and can be temporary or permanent. It can affect one ear or both ears. Noise-induced hearing loss can be caused by one-time exposure to an intense "impulse" sound, such as an explosion, or continuous exposure to loud sounds over an extended period, such as noise generated in a woodworking shop. Recreational activities that can put individuals at risk for NIHL include target shooting, hunting, snowmobile riding, listening to MP3 players at high volume through earbuds or headphones, playing in a band, and attending loud concerts.

introduced late in 2005. 2.1 with enhanced data rate in 2007 and latest version of Bluetooth is 3.0 released in April 2009. The uses plus radio frequency signals.

Headphones are pair of padded speakers which you wear over your ears in order to listen to a radio or recorded music, or for using a phone without other people hearing it. The scope of using earphones was less a few years ago, however, nowadays the scope of such use has increased to a great extent. Earphones are not only used for listening to recreational music, but also to hear audio-books, online videos, and online educational programs, cell phone headset, computer accessories such as keyboards, printers, personal digital assistants (PDAs), personal media players, GPS, and also various medical health and wellness devices.

The ISO 1999 occupational noise standard sets a time-weighted average (TWA) level of 85 dBA for an 8-hour period each day, but this level is not entirely innocuous as a small percentage of people may still suffer lifelong hearing loss if exposed to it. In India, smaller insert earphones produced sound pressure levels

Recreational noise-induced hearing loss (NIHL) is emerging as a major public health challenge globally, with personal audio devices (PADs) increasing exponentially in the last decade, especially in developing countries like India. Adolescents listening to loud music for long periods, especially with earphones, may predispose them to hearing loss, ear infection, tinnitus, and dizziness. loss, ear infection, tinnitus, and dizziness.

Materials and Methods:

The research design used in the study was quasi experimental one group pre-test and post-test design, with non-probability sampling technique in which purposive sampling technique was used to draw the sample. The data were collected from 60 undergraduate students at VV Puram degree college of arts and commerce by using

structured knowledge questionnaire. Post test was conducted after 7days using the same Structured knowledge questionnaire.

Results:

In pre-test knowledge of study participants regarding prevention of health-related complication Majority 37(61.7%) of the study participants had inadequate knowledge, 23(38.3%) had moderately adequate

knowledge and no one had adequate knowledge regarding prevention of health-related complication due to excessive use of Bluetooth/headphones. In post-test after STP majority 60(100%) had Adequate knowledge on prevention of health-related complication due to excessive use of Bluetooth/headphones

Table – 1: Association of pre-test knowledge scores of undergraduate students With selected demographic variables

N=60

Variables	Knowledge Level		Chi square	Df	P value (0.05)	Inference
	Inadequate Knowledge	Moderate knowledge				
1. Age in years						
a. 17-18 Years	6	3	0.184	2	0.912	NS
b. 19-20 years	19	13				
c. 21-22 years	12	7				
2. Gender						
a. Male	19	12	0.004	1	0.951	NS
b. Female	18	11				
3. Religion						
a. Hindu	34	22	0.322	1	0.57	NS
b. Muslim	3	1				
4. Type of family						
a. Nuclear family	32	22	1.465	2	0.481	NS
b. Joint family	4	1				
c. Single parent family	1	0				
5. Family income						
a. Below Rs. 5000	0	1	1.965	3	0.58	NS
b. Rs. 5001 – 10000	10	5				
c. Rs. 10001-20000	8	4				
d. Above Rs. 20000	19	13				
6. Residency						
a. Urban	29	20	0.697	1	0.404	NS
b. Rural	8	3				
1. Education of mother						
a. No formal education	10	2	6.512	3	0.089	NS
b. Primary	4	0				
c. Secondary	12	11				
d. Degree and above	11	10				

2. Education of father						
a. No formal education	3	1	5.509	3	0.138	NS
b. Primary	4	8				
c. Secondary	10	6				
d. Degree and above	20	8				
3. Occupation of father						
a. Professional	5	2	12.313	3	0.006	S
b. Non-Professional	4	8				
c. Self-employee	13	12				
d. Others	15	1				
4. Occupation of mother						
a. Professional	11	10	1.251	3	0.741	NS
b. Non-Professional	7	4				
c. Self-employee	11	5				
d. Others	8	4				
5. Using Bluetooth device						
a. Yes	34	22	0.322	1	0.57	NS
b. No	3	1				
6. Type of Head set						
a. Not using	3	1	0.909	2	0.153	NS
b. Wired type	13	8				
a. Urban	29	20	0.697	1	0.404	NS
b. Rural	8	3				
1. Education of mother						
a. No formal education	10	2	6.512	3	0.089	NS
b. Primary	4	0				
c. Secondary	12	11				
d. Degree and above	11	10				
2. Education of father						
a. No formal education	3	1	5.509	3	0.138	NS
b. Primary	4	8				
c. Secondary	10	6				
d. Degree and above	20	8				
3. Occupation of father						
a. Professional	5	2	12.313	3	0.006	S
b. Non-Professional	4	8				
c. Self-employee	13	12				
d. Others	15	1				
4. Occupation of mother						
a. Professional	11	10	1.251	3	0.741	NS

b. Non-Professional	7	4				
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b. Wired type	13	8				

The table revealed that there was no association between the knowledge among the undergraduate students regarding Prevention of health-related complications due to excessive use of Bluetooth/headphones selected demographic variables such age, gender, religion, type of family, family income, residency, education of father and mother, occupation of father and mother, and using Bluetooth device, type of device, duration of using, period of using, source of information. But knowledge was highly associated with occupation of father with p-value less than 0.05

TABLE – 2: Pre-test and post-test knowledge level of undergraduate students

N=60

Knowledge level	Pre test		Post test	
	Frequency	Percent	Frequency	Percent
a. Inadequate knowledge	37	61.7	0	0
b. Moderate knowledge	23	38.3	0	0
c. Adequate knowledge	0	0	60	100
Total	60	100	60	100

The above table revealed that in pre-test (61.7%) UG students had Inadequate knowledge and (38.3%) UG students had moderate knowledge regarding prevention of health-related complications due to excessive use of Bluetooth/headphones has increased after structured teaching program. After STP majority (100%) had adequate knowledge on health-related complications Due to excessive use of Bluetooth/headphones.

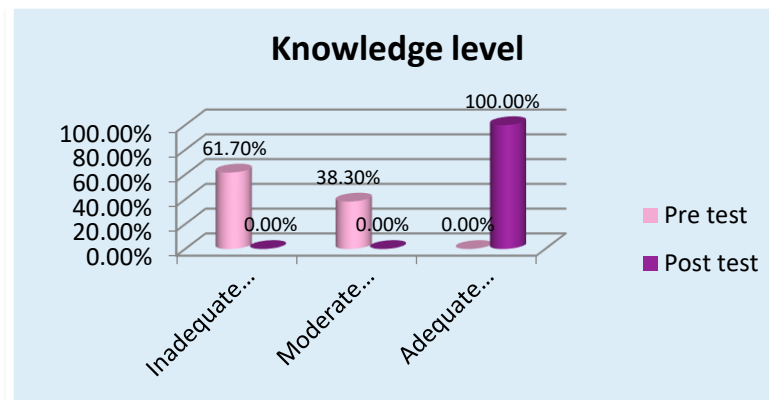


Fig 1: Comparison of pre-test and post-test knowledge level of undergraduate students

TABLE – 3: Mean, Mean percentage and standard deviation for the pre-test and post-test knowledge of undergraduate students

N=60

Sl. No.	Knowledge aspects	No. of Items	Max Score	Pre test			Post test		
				Mean %	Mean %	SD	Mean %	Mean %	SD
1	General information about Bluetooth/headphones	12	12	6.2	51.66	2.576	11.38	94.83	0.739
2	Health hazards of Bluetooth/headphones	18	18	8.55	47.5	1.774	17.3	96.11	0.889
3	Prevention	10	10	4.5	45	1.882	9.43	94.3	0.81
Overall		40	40	19.55	48.87	4.567	38.12	95.3	1.427

The above table revealed that in pre-test (51.66%) UG students had knowledge on general information (47.5%) UG students had knowledge on health- hazards and (45.0%) UG students had knowledge regarding prevention of health- related complications due to excessive use of Bluetooth/headphones has increased after structured teaching program. After STP majority (96.11%) Students had knowledge on general information (94.83%) UG students had knowledge on health- hazards and (94.3%) UG students had knowledge regarding prevention.

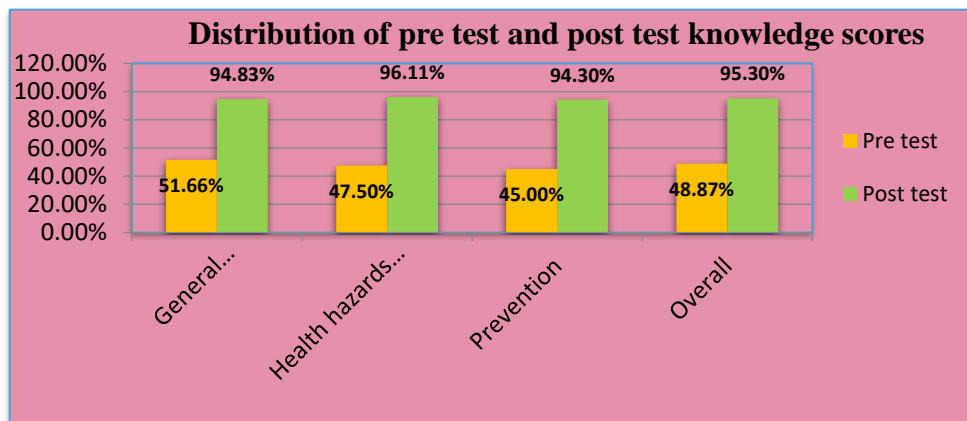


Fig 2: mean percentage of pre-test and post-test knowledge scores of undergraduate students.

TABLE-4 Comparison of pre-test and post-test knowledge scores of undergraduate students regarding Prevention of health-related complications due to excessive use of Bluetooth/headphones

N=60

Sl. No.	Knowledge aspects	Pre test		Post test		Mean difference	t-Value	Df	Inference
		Mean	SD	Mean	SD				
1	General information about Bluetooth/headphones	6.2	2.576	11.38	0.739	5.18	14.96	59	S
2	Health hazards of Bluetooth/headphones	8.85	1.774	17.3	0.889	8.45	29.789	59	S
3	Prevention	4.5	1.882	9.43	0.81	4.93	19.282	59	S
Overall		19.55	4.567	38.12	1.427	18.57	28.421	59	S

The above table revealed that, knowledge scores of undergraduate student’s has increased in all the section of questionnaire.

Hence structured teaching Programme on prevention of health-related complications due to excessive usage of Bluetooth/Headphones.

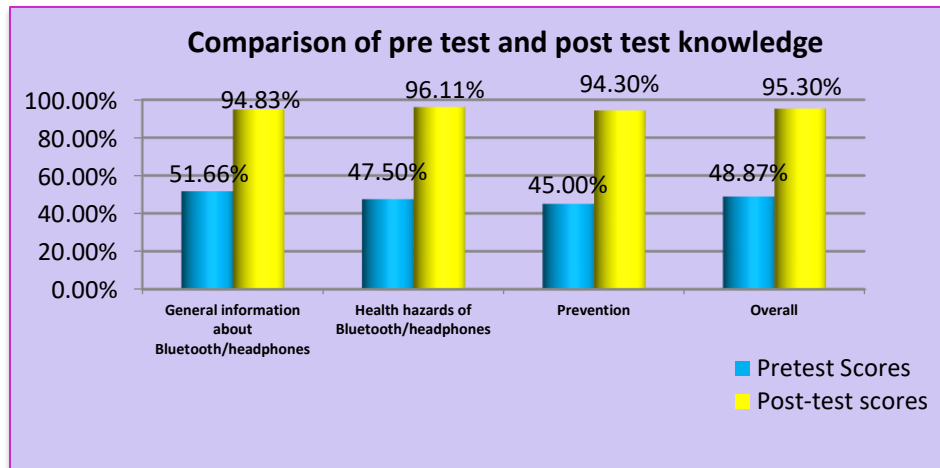


Fig 3: Comparison of pre and post-test knowledge scores of undergraduate Students.

The major findings of the study were discussed under the following headings:

1. Demographic characteristics of undergraduate students.
2. Assessment of knowledge regarding prevention of health-related complications due to excessive use of. Bluetooth/headphones among undergraduate students
3. Assessing the effectiveness of structured teaching programme on knowledge regarding prevention of health-related complications due to excessive use of Bluetooth/headphones
4. Association between pre-test knowledge scores with selected demographic variables
5. Testing of hypotheses

Discussion:

The present study is to assess the effectiveness of STP on knowledge regarding prevention of health-related complications due to excessive use of Bluetooth/headphones among undergraduate students in VV Puram degree college of arts and commerce, Bangalore”.

The major findings of the study revealed that in pre-test (61.7%) UG students had inadequate knowledge. The mean average score of the study being (48.87%). Emphasizes the need to create awareness should be increased among students through various programs. about prevention of health-related complications due to excessive use of. Bluetooth/headphones the study results are in congruent with the study findings literature suggesting the need for further study into excessive use of.

Bluetooth/headphones user listening habits in order to assess their potential danger to hearing health and it also gives save and healthy practices of earphones. Since there was a strong association ($0.006p < 0.05, df-1$) found among the demographic variables like occupation of father. The study concludes that Students have risky patterns of excessive using Bluetooth/headphones and music-listening devices. So for Planning educational programs in this domain for adolescents is necessary.

Conclusion

The overall experience of conducting this study was satisfying one, as there was good co-operation from students and authorities. The respondents were satisfied and happy with the information received. The study was new learning experience for the investigator. The study reveals what STP was effective for the undergraduate students.

Recommendations:

On the basis of the findings of the study following recommendations have been made:

- A similar may be conducted on a large sample of UG students for generalization of the study findings.
- A similarly study can be conducted among other groups.
- A similarly study can be conducted through video teaching.
- A similarly study can be conducted to assess practice on importance of play needs.
- A comparative study can be conducted between rural and urban areas.

Conflict of Interest: None

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