



Effect Of Asanas And Micro Exercises On Auditory Problem Of Headphone Users

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ABSTRACT: Yoga can improve physical and mental health by influencing hypothalamic-pituitary-adrenal axis and sympathetic nervous system. It develops the physical stability, balancing power in the body, auditory problem and helps in the healing of auditory problem. The objective of the study was to see the effect of asanas and micro exercises on auditory problem of headphone users. The students who frequently use headphones, were purposively selected, those who were having auditory problems (hearing loss) from various schools of sakti district, chhattisgarh. out of them, 20 students age ranging 14 - 19 years were randomly selected as the subjects for the study. Auditory problems of headphone users were selected as the dependent variables and asanas, and micro exercises were selected as independent variables. The participants' hearing was tested by using audiometer tools (pure tone audiometry test). The data were collected before and after the yoga training as pre data and post data from both the groups. Analysis of Co-variance (ANCOVA) was applied to see the significant difference between both the groups on auditory problem and level of significance was set at 0.05. It was concluded that a significant difference was found between both the groups for both right and left auditory problems. A significant effect of yoga training on auditory problems was found. Asanas and micro exercises have better responses after eight weeks training for both right and left auditory problems.

Key Words: Yoga, Asanas, Micro Exercises, Auditory Problem, Headphones.

INTRODUCTION

Yoga has been practiced for over thousands of years. It trained body posture (yoga asanas), regular breathing exercises (pranayama), joint and audio cleansing micro exercises, relaxation and meditation. Yoga can improve physical and mental health by influencing hypothalamic-pituitary-adrenal axis and sympathetic nervous system. It develops the physical stability, balancing power in the body, auditory problem and helps in the healing of auditory problem.

An asana is a body posture, originally and still a general term for a sitting meditation poses and later extended in hatha yoga and modern yoga as exercise, to any type of position, adding reclining, standing, inverted, twisting, and balancing poses. Micro exercises are independent in nature. People of every age can practice these exercises and get benefited. They provide good exercise to the organs as a result, the efficiency of functioning of the organs increases and man feels energized. These exercises can be comfortably practiced within 10-20 minutes during which entire body is relaxed and recharged. These exercises can be comfortably practiced within 10-20 minutes during which entire body is relaxed and recharged. Maintenance of health is the assumed result of micro yoga practice.

Auditory problem (auditory processing disorder) is a hearing problem that affects about 3% -5% of school-aged children. Kids with this condition, also known as central auditory processing disorder (CAPD), can't understand what they hear in the same way other kids do. This is because their ears and brain don't fully coordinate. There are various types of hearing loss i.e. Sensorineural hearing loss, conductive hearing loss and mixed hearing loss. Auditory problem (also known as auditory processing disorder) is where you have difficulty understanding sounds, including spoken words and degree of hearing loss.

Purpose of the Study

The purpose of the study was to see the effect of asanas and micro exercises on auditory problem of headphone users.

Significance of the Study

1. This study addresses the growing worry of hearing problems made worse by digital strain by demonstrating how well asanas and micro exercises improve auditory function.
2. The potential of these exercises as a non-pharmacological intervention is highlighted by the notable decrease in auditory issues in both ears after the intervention, as compared to the control group.
3. The findings are consistent with earlier studies that found that identical yoga poses can enhance aural acuity.

Hypothesis

It was hypothesized earlier that there will be a significant effect of asanas and micro exercises on auditory problem of headphone users.

Delimitations

1. The study was formulated with the delimitations in the following areas:
2. The study was delimited to 20 male and female school students, age ranging between 14-19 years. they are headphone users.
3. The training period was delimited to 8 weeks.
4. The study was restricted to the following on selected asanas i.e. Tadasana, virabhadrasana, sirsasana, sarvangasana, simhasana, chakrasana, ustrasana, urdhva mukha svanasana, halasana, surya namaskar and karnapidasana.
5. The study was further delimited to selected micro exercises i.e. Round the inside of the ear with the index finger and stretching the ear up and down, ear massage with index finger, press this point in between the index and middle finger, karna shakti vikasak (yogic sukshma vyayama, dhirendra brahmachari, 1953).

Limitations

1. The dietary intake, lifestyle, and emotional conditions of subjects were considered as the limitation of the study.
2. Weather conditions and health related issues of students were also considered as a limitation of the study.
3. Certain factors like behavior, individual capabilities, routine work, and interest etc. may affect the results of this investigation and are considered in the study.
4. Although the subjects were given proper guidelines to be followed prior to the experimental treatment, exercised on the subjects regarding their daily work.

METHODOLOGY

- ✚ **Selection of Subjects:** The students who frequently use digital headphones, were purposively selected, those who were having auditory problems (hearing loss) from various schools of sakti district, chhattisgarh. out of them, 20 students age ranging 14 - 19 years were randomly selected as the subjects for the study. The students were randomly assigned into two groups, each consisted of 10 students. As per as the auditory problem is concerned, up to the moderate level 55 dB HL was considered for the study.
- ✚ **Selection of Variables:** Asanas and micro exercises were selected as independent variables. Whereas auditory problems of headphone users were selected as the dependent variables. The participants' hearing was tested by using audiometer tools (pure tone audiometry test).
- ✚ **Experimental Design:** Pre-test post-test randomized group design was employed in the study.

- ✚ **Collection of Data:** The data were collected before and after the yoga training as pre data and post data from both the groups. Auditory problems of all the selected students were tested with the help of medical specialist.
- ✚ **Administration of Training Programme:** The control group have not participated in any kind of yoga training while asana and micro exercises group was administered different yoga training for eight weeks.
- ✚ **Statistical Techniques:** Descriptive statistics were used to describe the nature and characteristics of the data. Analysis of Co-variance (ANCOVA) was applied to see the significant difference between both the groups on auditory problem and level of significance was set at 0.05.

RESULTS

1. Auditory Problem in Right Ear

Table 1

Descriptive Statistics of Both the Groups for Auditory Problem in Right Ear

Groups	N	Pre-Data		Post-Data		Adjusted*	
		Mean	SD	Mean	SD	Marginal Mean	SE
Control Group	10	34.53	8.25	34.21	9.25	36.64	.26
Asanas and Micro Exercises Group	10	39.34	7.58	30.25	7.47	28.21	.25

***Covariates appearing in the model are evaluated at the following values: pre data = 36.56**

Table 1 depicted the descriptive statistics of both the groups for auditory problem in right ear. The mean and SD of pre-data for both the groups i.e. Control group, and asanas and micro exercises group were 34.53 ± 8.25 and 39.34 ± 7.58 respectively. The mean and SD of post data for both the groups i.e. Control group, and asanas and micro exercises group were 34.21 ± 9.25 and 30.25 ± 7.47 respectively. The adjusted mean for both the groups i.e. Control group, and asanas and micro exercises group were 36.64 and 28.21 respectively. Whereas covariates appearing in the model are evaluated at the pre data is 36.56.

Figure 1

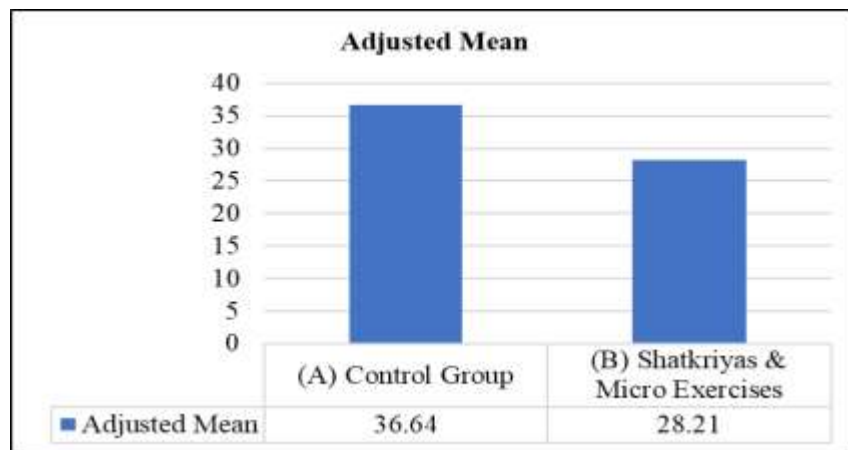


Figure 1: Adjusted Mean of Both the Groups for Auditory Problem in Right Ear

Table 2

ANCOVA Table of Auditory Problem in Right Ear

Sources of Variation	Sum of Squares	DF	Mean Square	F	P-Value
Between Group	192.68	1	192.68	103.59*	0.00
Error	31.72	17	1.86		

*Significant at 0.05 level

Table 2 revealed that the F value 103.59 was significant at 0.05 level of significance as the obtained p-value 0.00 was less than 0.05.

2. Auditory Problem in Left Ear

Table 3

Descriptive Statistics of Both the Groups for Auditory Problem in Left Ear

Groups	N	Pre-Data		Post-Data		Adjusted*	
		Mean	SD	Mean	SD	Marginal Mean	SE
Control Group	10	35.79	7.58	35.65	7.36	38.26	.21
Asanas and Micro Exercises Group	10	40.43	6.67	31.30	8.52	30.86	.22

*Covariates appearing in the model are evaluated at the following values: pre data = 38.64

Table 3 depicted the descriptive statistics of both the groups for auditory problem in left ear. The mean and SD of pre-data for both the groups i.e. Control group, and asanas and micro exercises group were 35.79 ± 7.58 and 40.43 ± 6.67 respectively. The mean and SD of post data for both the groups i.e.

Control group, and asanas and micro exercises group were 35.65 ± 7.36 and 31.30 ± 8.52 respectively. The adjusted mean for both the groups i.e. Control group, and asanas and micro exercises group were 38.26 and 30.86 respectively. Whereas covariates appearing in the model are evaluated at the pre data is 38.64.

Figure 2

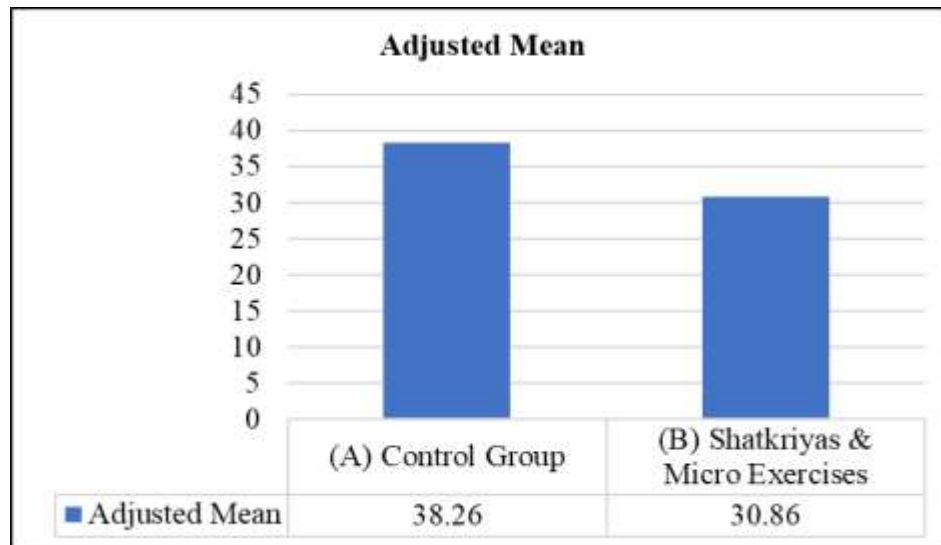


Figure 2: Adjusted Mean of Both the Groups for Auditory Problem in Left Ear

Table 4

ANCOVA Table of Auditory Problem in Left Ear

Sources of Variation	Sum of Squares	DF	Mean Square	F	P-Value
Between Group	198.35	1	198.35	98.68*	0.00
Error	34.26	17	2.01		

***Significant at 0.05 level**

Table 4 revealed that the F value 98.68 was significant at 0.05 level of significance as the obtained p-value 0.00 was less than 0.05.

DISCUSSION

Mulani (2017) done a literature review: yoga exercise effect on audio acuity. As per Mulani, increased prevalence of hearing loss has become a worldwide health problem. Progressivity of hearing problems is increased by digital eye and ear drum strain. Digital eye and ear strain is a repetitive strain injury and occurs among 70% long time earphone users. Usually, it has strain on the extraocular muscle, ear drum and a decreased of visual and auditory acuity. Digital eye and ear strain should be reduced to improve visual and auditory acuity. Yoga eye and ear exercises can improve visual and audio acuity. It can be concluded that practicing yoga exercises will reduce fatigue of the extraocular muscles, ear drum and improve visual and audio acuity. Gupta & Aparna (2019) found that globally, eye fatigue is one of the most commonly reported conditions in nonpresbyopic population with asthenopic symptoms.

Naduvanthody S. et. al. (2022) also found the improvement in students with bilateral sensorineural hearing impairment after 6 week training of structured yoga program. Sanjari and Qasemi (2016) also found that the implementation of yoga exercises can serve as an effective training modality for enhancing static balance, dynamic balance, and overall quality of life among female adolescents with hearing impairments. Hence, it has appeared that this exercise protocol may be implemented and employed as a valuable supplementary approach to mitigate certain challenges experienced by hearing-impaired adolescents.

CONCLUSION

It was concluded that a significant difference was found between both the groups for both right and left auditory problems. A significant effect of yoga training on auditory problems was found. Asanas and micro exercises have better responses after eight weeks training for both right and left auditory problems. The present research study concluded that both the right and left ears' auditory function was greatly enhanced by asanas and micro exercises, with the intervention group's adjusted means being noticeably lower. ANCOVA results revealed statistically significant improvements ($p < 0.05$) with high F-values (103.59 for the right ear and 98.68 for the left ear). These results imply that include such activities could be a useful strategy for reducing hearing problems, especially for people who experience stress from using digital devices for extended periods of time.

RECOMMENDATION

1. This study may be conducted with various aspects of yoga i.e. Asanas and micro exercises etc.
2. Similar type of study can be conducted with various health problems i.e. Auditory problem, headphone users etc.
3. This study may be conducted on subjects of different age category.
4. This study may be conducted with the different variables.

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