Original Research Article

A Study to Assess the Knowledge Regarding Effect of Classroom Noise on Teaching and Learning Among B.Sc. Nursing 3rd Semester Students Studying in SCPM College of Nursing & Paramedical Science, Gonda with the View to Develop Informational Booklet

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ABSTRACT

Noise, a disruptive sound affecting well-being, is a concern in schools, impacting education by causing attention and memory issues in students. This study was conducted to assess the knowledge regarding effect of classroom noise on teaching and learning among b.sc. Nursing 3rd semester students studying in SCPM college of nursing & paramedical science, Gonda with the view to develop informational booklet. The major objective of the study is to determine the knowledge level of third-semester B.Sc. Nursing students regarding the impact of classroom noise on teaching and learning and to explore the connection between the students' knowledge of classroom noise effects on teaching and learning and their demographic characteristics. This study utilized a descriptive research approach and design. Non-probability purposive sampling was used to select a sample of 60 third-semester B.Sc. Nursing students at SCPM College of Nursing & Paramedical Sciences in Gonda. Data was collected through questionnaires covering demographic information and knowledge about the impact of classroom noise on teaching and learning. Data analysis involved descriptive and inferential statistics, including frequency, percentage, and Chi-square tests. The findings indicate that 60% of the students had inadequate knowledge, 37% had moderate knowledge, and only 4% had adequate knowledge regarding the effects of classroom noise on teaching and learning.

Keywords: Noise; students; knowledge

INTRODUCTION

Noise is defined as "a sound, especially one that is loud or unpleasant, causing disturbance," which implies unwanted sounds that can harm the human body, particularly the ears. Noise pollution in the school environment is a pressing issue that negatively impacts the education system, involving students, teachers, and school management, affecting both their professional and personal lives. 1

According to the World Health Organization (WHO), excessive classroom noise can lead to discomfort for both students and teachers. Students may face learning difficulties, while

teachers might experience irreversible health issues. 2

Classroom noise can be categorized into two types: background noise and noisy classroom noise. Background noise refers to extraneous sounds unrelated to the classroom activities, such as traffic or air conditioning noise, which can impede learning. On the other hand, noisy classroom noise can be intentionally used by teachers as a learning tool to foster engagement, including debates, informal discussions, or group activities. 3

Excessive noise in classrooms can lead to increased stress among teachers, prompting them to raise their voices, while students may also speak louder to be heard over the noise. This escalating volume can eventually harm everyone's hearing and create an uncomfortable and unpleasant learning environment. 4

The effects of excessive noise in classrooms include difficulties in understanding speech, improper student behavior, decreased attention span, and reduced concentration. Moreover, high noise levels not only hinder students' learning abilities but can also cause hearing loss and tinnitus in teachers. Research indicates that many teachers experience sound-induced auditory fatigue, speech comprehension difficulties, and hypersensitivity to noise due to prolonged exposure to noisy environments. 5

A study by Agbalagba et al. (2013) evaluated noise pollution levels in four sawmill factories in Delta State, measuring machine noise pollution levels and background noise levels at varying distances from the factories. The findings revealed high levels of machine noise pollution, posing risks to the workers' health and well-being. 6

In conclusion, addressing excessive noise in educational settings is crucial to creating a conducive learning environment for students and ensuring the well-being of teachers and staff. Implementing strategies to mitigate noise pollution, such as soundproofing measures, establishing noise regulations, and promoting awareness about the detrimental effects of noise, can significantly enhance the overall educational experience for all stakeholders involved.

Need for study

Studies have shown that noise has direct negative effects on students' learning, particularly impacting language and reading development. Additionally, noise can lead to issues with attention, memory, and motivation. Research indicates that young children are frequently exposed to high levels of noise, which can result in stress, attention difficulties, and delays in neuropsychomotor development. Excessive noise during classes can interfere with the attention and concentration of both teachers and students. Therefore, researchers chose to conduct a study on this topic. 7

Noise pollution causes unjustifiable interference and a negative impact on human health, comfort, and overall quality of life. In educational environments, noise pollution disrupts the dissemination of information from teachers to students during study sessions. The National Center for Education Statistics (2015) has underscored the severity of classroom disruptions, highlighting them as a common and serious issue that can negatively affect students' learning and safety by creating distractions and an unsafe learning environment. 8

A study by Bulunuz (2017) found that training did not lead to a measurable reduction in noise pollution levels, which were measured to be between 80-90 dB, particularly during break times. However, students' and teachers' awareness and consciousness of noise pollution were raised during the research process. Thus, the researchers chose the following title for their study. 9

In another study by Imhof M (2009), the impact of in-class noise on 5th-grade students' listening comprehension and memory skills was examined. A sample group of 146 students listened to two texts, one in a noisy classroom environment (79 dBA) and one in a noiseless classroom with sound insulation (36 dBA). A test on

comprehension and recall was administered separately for each text. The study revealed that classroom noise significantly affected the 5th-grade students' levels of understanding and memory of the material, consequently reducing their learning performance. In the noiseless environment, however, students demonstrated better understanding and retention of the material. The study aimed to reduce noise pollution in primary schools through training initiatives. 10

The research sheds light on the need for teacher training programs on how to effectively manage noise in the classroom. Educators can benefit from understanding the impact of noise on student engagement and learning, enabling them to implement strategies to minimize distractions and create a more conducive learning environment.

Objectives
1. To assess the level of knowledge regarding effect of classroom noise on teaching and learning among B.Sc. Nursing 3rd semester students.
2. To determine the association between level of knowledge regarding effect of classroom noise on teaching and learning among the B.Sc. Nursing 3rd semester students with their selected demographic variables.
3. To develop informational booklets regarding effect of classroom noise on teaching and learning.

Hypothesis
H1: There will an inadequate knowledge regarding effect of classroom noise on teaching and learning among B.Sc. Nursing 3rd semester students.
H2: There will a significant association between level of knowledge on effect of classroom noise on teaching and learning with their selected demographic variable.

Assumptions
B.Sc. Nursing 3rd semester students may have some knowledge regarding Class room noise on teaching and learning.
Informational booklet regarding effect of classroom noise on teaching and learning may helps to enhance the knowledge of B.Sc. Nursing 3rd semester students.

Research Approach: Descriptive approach.
Research Design: Descriptive research design,

Variables Under the Study
Demographic variables: selected for present study are age in years, gender, religion, type of family, type of the area of the college, classroom existing area, education of parents, occupation of parents, income of parents source of previous knowledge.
Research variables: these are the qualities, properties, or characteristics that are observed or measured in a natural setting without manipulating and establishing cause – and – effect relationship.

Setting Of the Study
The present study conducted in SCPM College of Nursing & Paramedical Science, Gonda. Based on feasibility of conducting study and availability of college students under study.
Target population: B.Sc. Nursing students.
Accessible population: B. Sc. Nursing 3rd semester students.
Sample and Sampling Technique
Sample: Sample is a subset of a population selected to participate in the study.
Sample for the present study in B.Sc. Nursing 3rd semester students studying in SCPM College of Nursing & Paramedical Science, Gonda
Sample Size: Sample size for the present study was 60 B.Sc. Nursing 3rd semester students.
Sampling Technique: In this study, non-probability purposive sampling technique is

used to select the sample from the target population.

Criteria For Sample Selection:
Inclusion Criteria:
B.Sc. Nursing 3rd semester students.
✓ Who are all present during the data collection period.
✓ Who are interested to participate in this study.
✓ Who can read English.

Exclusive Criteria:
B.Sc. Nursing 3rd semester students.
❖ Who are all not present during the data collection.
❖ Who are all attended the same type of study earlier.
❖ Who are all sick at the time of data collection.
❖ Who are all not able to follow instruction.

Description and Development of The Tool
In this particular study, an extensive and systematic review of literature was conducted based on its objectives. Expert opinions were sought on the content of the tool to ensure its validity. Subsequently, the researcher developed a structured questionnaire. The steps involved in preparing the tool included reviewing the literature and creating a blueprint.

A structured questionnaire consist of two parts they are as follows
Part 1: Demographic profile: It includes age in years, gender, religion, type of family, type of area of the college, classroom space availability, parents' education, parents' occupation, parents' income, and the source of previous knowledge.
Part 2: Structured knowledge-based questionnaire: Regarding the effect of classroom noise on teaching and learning.

Scoring Procedure:
The structured knowledge questionnaire is designed with twenty items, each with four options and one correct answer. A score of one is given for a correct response and zero for an incorrect response to each item. Therefore, the maximum score that can be achieved from the twenty items is twenty, while the minimum score is zero.

Testing the tool
Content validity
The tool prepared for the study, including the study objectives, reference blueprint, questionnaire design, and content validity certification, was validated by two nursing experts from the Department of Medical Surgical Nursing. The experts were asked to assess the items' relevance, accuracy, clarity, appropriateness of the title, and the content of the college. Subsequently, the experts' feedback and suggestions were integrated into the final tool design with guidance.

Ethical consideration:
Permission was obtained from the research committee to conduct the study at SCPM College of Nursing & Paramedical Science, Gonda. Informed consent was obtained from the B.Sc. Nursing 3rd-semester students who participated in the study. The students were assured of anonymity, confidentiality of information, and that any data collected from them was solely for research purposes.

Pilot Study:
A pilot study was conducted on 5th June 2023 with a sample of six B.Sc. Nursing 4th-year students at SCPM College of Nursing & Paramedical Science, Gonda, after receiving consent from the students. The researcher obtained permission from the Institute's Principal. The pilot study analysis aligned with the study objectives, where the tool was administered to the subjects, and data were collected. Data analysis included descriptive and inferential statistics. The tool was deemed feasible, practical, and acceptable post-pilot study, requiring no changes to the main study design.

Data Collection Procedure
After securing permission from the relevant authorities at SCPM College of Nursing & Paramedical Science, Gonda, the study

commenced on 8th June 2023. The study's purpose was explained to the students, ensuring confidentiality and rapport establishment. Data was collected from 60 B.Sc. Nursing 3rd-semester students after obtaining their consent using a structured questionnaire. The collected data underwent systematic organization, scientific analysis, and interpretation through descriptive and inferential statistics.

Descriptive And Inferential Statistical Analysis:

Frequency and percentage analyses were employed to depict the demographic characteristics of the students under study. Chi-square analysis was utilized to assess the association between knowledge concerning the effects of classroom noise on teaching and learning and selected demographic variables.

RESULT

Table 1: Frequency and Percentage distribution of B.Sc. Nursing 3rd semester students according to their demographic variables N=60

Demographic Variable	Frequency (f)	Percentage (%)
Age in Years		
17-21	44	0.73
22-26	16	0.27
27-31	0	0
32-35	0	0
Gender		
Male	3	0.05
Female	57	0.95
Transgender	0	0
Religion		
Hindu	51	0.85
Muslim	9	0.15
Christian	0	0
Other	0	0
Type Family		
Nuclear	33	0.55
Joint	27	0.45
Extended	0	0
Type of the area of the college		
Rural Area	37	0.62
Urban Area	23	0.38
Classroom Existing area		
Away from the city	26	0.43
Center the city	13	0.22
Near Nation Highway	13	0.22
A way from National Highway	3	0.05
Near Railway line	4	0.06
Away from the railway line	1	0.02
Education of Parents		
Illiterate	3	0.05
School education	13	0.22
Graduate	29	0.48
Post graduate	15	0.25
Occupation of parents		
Unemployed	0	0
Farmer	9	0.15
Government employee	14	0.23
Private employee	15	0.25
Self-employed	22	0.37
Income of Parents		
Below Rs. 5,000/-	6	0.1
Rs. 5,000-10,000/-	11	0.18
Rs. 10,001-15,000/-	22	0.37
Above Rs. 15,000/-	21	0.35
Source of Previous knowledge		
Family and friend	12	0.2
Mass Media	4	0.07
Textbook	12	0.2
Schooling	32	0.53
Any other sources	0	0

Table 1 illustrates the frequency and percentage distribution of B.Sc. Nursing 3rd-semester students according to age in years. Out of the total, 44 (37%) belong to the age group of 17-21 years, 16 (26%) belong to the age group of 22-26 years. There were no students in the age categories of 27-31 years or 32-35 years.

Regarding gender, the majority of students, 57 (95%), were female, while 3 (5%) were male, and there were no transgender students (0%).

In terms of religion, the majority of students, 51 (85%), were Hindu, and 9 (15%) were Muslim. There were no students who identified as Christian or any other religion.

Based on family type, the majority of students, 33 (55%), lived in nuclear families, while 27 (45%) lived in joint families, and there were no students from extended families.

In relation to residential area, the majority of students, 37 (61%), were from rural areas, and 23 (38%) were from urban areas.

Regarding location, 26 (43%) students lived away from the city, 13 (21%) in the city center, 13 (21%) near a National Highway, 3 (5%) away from a National Highway, 4 (6%) near a railway line, and 1 (1%) away from a railway line.

In terms of education, the majority of students had different levels of education: 3 (5%) were illiterate, 13 (22%) had school education, 29 (48%) were graduates, and 15 (25%) were postgraduates.

With respect to employment status, the majority of students were categorized as follows: 0 (0%) were unemployed, 9 (15%) were farmers, 14 (23%) were government employees, 15 (25%) were private employees, and 22 (37%) were self-employed.

In terms of monthly income, the majority of students were distributed across various income brackets: 6 (10%) earned below Rs. 5,000, 22 (36%) earned between Rs. 5,000 - 10,000, 21 (35%) earned between Rs. 10,001 - 15,000, and 11 (19%) earned above Rs. 15,000.

Regarding sources of information on teaching and learning effects, 12 (20%) mentioned family, 4 (6%) cited mass media, 12 (20%) referred to textbooks, 32 (53%) mentioned schooling, and none cited any other source.

Table 2: Frequency and Percentage Distribution of knowledge regarding effects of classroom noise on teaching and learning among B.Sc. Nursing 3rd Semester Students. N=60

Level of knowledge	Score	Frequency	Percentage
Inadequate	10	36	60%
Moderate Adequate	10-15	22	37%
Adequate	Above 15	2	3%

The above table 2 depicts that among sixty B.Sc. Nursing 3rd semester students 36 (60%) of them had inadequate Level of knowledge and 22 (37%) of them had moderate level of knowledge and 2 (4%) of them had adequate level of knowledge.

Table 3: Determine the association between the level of knowledge regarding effect of classroom on teaching and learning among B.Sc. Nursing 3rd Semester students with the selected demographic variables N=60

S. No	Demographic Variable		Level of knowledge score			Chi square	Inference
			Adequate	Moderately adequate	Inadequate		
1.	Age in Years	17-21	0	2	42	0.048 df-1 (P=0.9)	NS
		22-26	0	0	16		
		27-31	0	0	0		
		32.35	0	0	0		
2.	Gender	Male	0	0	3	0.021 df -1 (P=0.9)	NS
		Female	0	2	55		
		Transgender	0	0	0		
3.	Religion	Hindu	0	2	49	0.006 df -1 (P=0.9)	NS
		Muslim	0	0	9		
		Christian	0	0	0		
		Other	0	0	0		
4.	Type of Family	Nuclear	0	2	31	0.054 df -1 (P=0.9)	NS
		Joint	0	0	27		
		Extended	0	0	0		

5.	Type of the area of the College	Rural Area	0	0	37	0.101 df -1 (P=0.9)	NS
		Urban Area	0	2	21		
6.	Classroom existing area	Away from the city	0	0	26	0.113 df -5 (P=0.99)	NS
		Center the City	0	2	11		
		Near National Highway	0	0	13		
		Away from National high	0	0	3		
		Near Rail way line	0		4		
		Away from Railway line	0	0	1		
7.	Education of Parents	Illiterate	0	0	3	0.01113 df -3 (P-0.97)	NS
		School Education	0	2	13		
		Graduation	0	0	29		
		Post-Graduation	0	0	15		
8.	Occupation of Parents	Un Employed	0	0	0	0.0232 df-4 (P=0.9)	NS
		Farmer	0	0	9		
		Government Employee	0	1	30		
		Private Employee	0	0	15		
		Self-Employed		1	21		
9.	Income of Parents	Below Rs 5,000	0	0	6	0.79 df -3 (P=0.9)	NS
		Rs 5,000-10,000/-	0	0	11		
		Rs 5,001-10,000/-	0	0	22		
		Above Rs- 15,000/-	0	2	19		
10.	Source of Previous knowledge	Family and friends	0	0	12	0.04 df-3 (P=0.9)	NS
		Mass Media	0	0	4		
		Textbook	0	0	12		
		Schooling	0	2	30		
		Any Other Sources	0	0	0		

Note: df- degree of freedom, P- Probability, NS- Not Significant.

The above table 3 displayed that the association between the level of knowledge regarding the effect of classroom noise on teaching and learning and selected demographic variables among B.Sc. Nursing 3rd-semester students. Chi-square values were calculated to determine the association between the level of knowledge and selected demographic variables such as age ($X2=0.048$), gender ($X2=0.021$), religion ($X2=0.0006$), type of family ($X2=0.054$), college's area type ($X2=0.101$), classroom existing area ($X2=0.113$), parents' education ($X2=0.113$), parents' occupation ($X2=1.3966$), parents' income ($X2=0.04$), and source of previous knowledge ($X2=0.04$). The p-values for all demographic variables are greater than 0.05. Therefore, there is no association between the level of knowledge regarding the effect of classroom noise on teaching and learning among B.Sc. Nursing 3rd-semester students and the demographic variables mentioned.

DISCUSSION

The first objective was to assess the level of knowledge regarding the effect of classroom noise on teaching and learning among B.Sc. Nursing 3rd-semester students studying in SCPM College of Nursing and Paramedical Science, Gonda. Among sixty B.Sc. Nursing 3rd-semester students: 36 (60%) had inadequate level of knowledge, 22 (37%) had a moderate level of knowledge, and 2 (4%) had an adequate level of knowledge.

The second objective was to determine the association between the level of knowledge regarding the effect of classroom noise on teaching and learning and selected demographic variables among the B.Sc. Nursing 3rd-semester students. Chi-square values were calculated to find the association between the practice with selected demographic variables. Results show that the p-values for all demographic variables were less than 0.05; thus, there is no association between any of the demographic variables and the level of knowledge regarding the effect of classroom noise on teaching and learning.

CONCLUSION

The study aimed to assess the knowledge of B.Sc. Nursing 3rd-semester students at SCPM College of Nursing and Paramedical Science in Gonda regarding the impact of classroom noise on teaching and learning. Among the students, 60% had inadequate knowledge, 37% had moderate knowledge, and 4% had adequate knowledge. The analysis found no significant association between knowledge levels and demographic variables such as age, gender, religion, family type, college area, classroom area, parents' education, parents' occupation, parents' income, and source of income, as all chi-square values were above 0.05.

Declaration by Authors

Ethical Approval: Approval got from the SCPM College of Nursing and Paramedical Sciences and received consent from students those who are participated in this study.

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