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# A pre-experimental study to assess the effectiveness of structured teaching program on knowledge regarding text neck syndrome among students of selected college of nursing, Mohali

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**Abstract**
**Background:** Text-Neck syndrome also known as Teck-Neck Syndrome or smart phone neck syndrome. The term "Text-Neck" was first coined by an US chiropractor Dr. Dean L. Fishman in 2008. It is defined as a repeated stress injury and pain that arises from spending excessive time looking down at electronic devices. The repeated forward head posture and strain on the neck muscles can lead to prolonged issues if not addressed. Text-Neck syndrome is caused by constant bending of the neck and hunching of the shoulders can strain the muscles, ligaments and discs in the neck and upper back, leading to pain, stiffness and discomfort. In addition, Text-Neck syndrome is also caused by lack of physical activity i.e. sedentary lifestyle or stress and tension can cause individual to hunch their shoulders and adopt poor posture, which can contribute to Text-Neck syndrome. Aim of study: The aim of the study is to improve the knowledge regarding text neck syndrome among the nursing students of Selected College of Nursing, Mohali.
**Design and methods:** Quantitative approach and pre-experimental, one group pre-test post-test carried out the study. The area selected for the study was Rayat Bahra College of Nursing, Mohali. Purposive sampling technique was used to select 100 nursing students to find out the effectiveness of structured teaching program on knowledge regarding text neck syndrome among students. Collected data was analyzed by using descriptive and inferential statistics.
Result: The results revealed that there was statistically significant difference between pre-test and post-test scores of subjects. The paired t-test results demonstrate a statistically significant improvement in scores from the pre-test (10.3±3.767, 34.33%) to the post-test, (20.27±2.853, 67.57%). The mean difference of 9.970 is beyond the critical value of 1.98, indicating a substantial increase in knowledge level. This suggests that the intervention or learning experience had a significant and beneficial effect on the participants. Hence, we accept the research hypothesis. Conclusion: conclusion of the study is that the structured teaching programme was effective in improving the knowledge of the students. Therefore information, inspiration and mentorship were the felt need of nursing students.

**Keywords:** Text neck syndrome, effectiveness, students, knowledge

## Introduction

Text-Neck syndrome also known as Teck-Neck Syndrome or smart phone neck syndrome. The term "Text-Neck" was first coined by an US chiropractor Dr. Dean L. Fishman in 2008. It is defined as a repeated stress injury and pain that arises from spending excessive time looking down at electronic devices. The repeated forward head posture and strain on the neck muscles can lead to prolonged issues if not addressed. Text-Neck syndrome is caused by constant bending of the neck and hunching of the shoulders can strain the muscles, ligaments and discs in the neck and upper back, leading to pain, stiffness and discomfort. In addition, Text-Neck syndrome is also caused by lack of physical activity i.e. sedentary lifestyle or stress and tension can cause individual to hunch their shoulders and adopt poor posture, which can contribute to Text-Neck syndrome [1].

Magnetic resonance imaging (MRI) is often used, but it‘s important to note that many people show abnormal results on an MRI even if they don't have symptoms. MRI is most helpful in cases with specific nerve problems, pain that doesn't improve with typical treatments, or when considering more invasive treatments. There isn‘t much research on treatments for

neck pain, but exercise seems to help many people. Muscle relaxants can be useful for neck pain caused by muscle spasms, and there's some evidence supporting the use of epidural steroid injections for nerve pain (radiculopathy), though results are mixed. For those with specific joint issues, treatments like radiofrequency denervation may show weak benefits [2].

## Material and methods

### Research approach

Research approach involves the description of the plan to investigate the research problem in a systemic and structured manner. A quantitative research was used to assess the effectiveness of structured teaching programme on the knowledge regarding text neck syndrome among selected students of Selected College of Nursing, Mohali.

### Research design

A research design is a strategic blueprint including the methods and techniques to be used in organizing collecting and analysing the research study the design used for this study was pre-experimental design (one group-pretest posttest-design) experiment group pre-test

### Research setting

Structured teaching programme the study was conducted at Rayat Bahra College of Nursing, Mohali.

### Research population

Post-test in the current study the population consisted of B.Sc. Nursing students studying at (RBCN), Mohali. Sample size sample is subject or part of population selected to participate in research study. The total sample size of the study was100 students.

**Sampling technique:** purposive sampling technique was used to select the sample for present study.

### Sampling criteria

### Inclusion criteria

Students who was present at the time of data collection. Both male and female students was included.

### Variables

### Independent variables

The independent variables was structured teaching programme on text neck syndrome.

### Dependent variable

The dependent variables is knowledge regarding text neck syndrome the tool was formulated according to the need of study.

### Selection and development of tool-

The tool was formulated according to the need of study:

- **Part A:** Socio demographic profile.
- **Part B:** Self Structured Knowledge Questionnaire on TNS.
- **Part C:** Structured Teaching Programme.

### Validity of tool

The tool was given to the experts from nursing field for checking content validity of the tool. The modifications were made according to suggestions of the experts and the final tool was prepared after consultations with the research guide.

### Reliability

The reliability of the tool was calculated by split half (even-odd) correlation, the reliability of tool came out to be 0.88 of part b, hence the tool was reliable.

### Pilot study

The pilot study was conducted to check the portability and feasibility of the tool. Convenience sampling technique was used to select the sample to check the effectiveness of structured teaching programme on knowledge regarding on TNS.

### Ethical consideration

- A written permission was taken from director principal of Rayat Bahra College of Nursing, Mohali prior to conducting the research.
- A written consent was taken from ethical research committee of Rayat Bahra College of Nursing, Mohali.
- Verbal consent were be taken from the study subjects.
- A confidentiality and privacy of selected participants was maintained throughout the study through securing the identifying information and anonymizing while reporting results.

### Plan for analysis

- The analysis was done in accordance to the objectives by using statistical and inferential method.
- Collected data was arranged using tables and diagrams.

## Results and Discussion

### Results

Description of demographic profile

**Objective 1:** To assess the demographic variables among students.

**Table 1:** Demographic Profile of the Subjects

| Variables | Options | Frequency (f) N = 100 | Percentage (%) |
|---|---|---|---|
| Age group | 18-19 years | 21 | 21.0% |
| | 20-21 years | 44 | 44.0% |
| | 22-23 years | 32 | 32.0% |
| | More than 23 years | 3 | 3.0% |
| Gender | Male | 23 | 23.0% |
| | Female | 77 | 77.0% |
| Religion | Sikh | 37 | 37.0% |
| | Hindu | 38 | 38.0% |
| | Muslim | 24 | 24.0% |
| | Christian | 1 | 1.0% |
| Class | B.Sc. Nursing 4th Semester | 54 | 54.0% |
| | B.Sc. Nursing 5th Semester | 46 | 46.0% |
| Habitat | Urban | 53 | 53.0% |
| | Rural | 47 | 47.0% |
| Accommodation | Hostel | 29 | 29.0% |
| | P.G/flat | 34 | 34.0% |
| | Day scholar | 37 | 37.0% |
| Types of Family | Joint | 26 | 26.0% |
| | Nuclear | 74 | 74.0% |
| Education of Father | No formal education | 7 | 7.0% |
| | Primary school | 13 | 13.0% |
| | High school | 35 | 35.0% |
| | Graduate or above | 45 | 45.0% |
| Education of Mother | No formal education | 11 | 11.0% |
| | Primary school | 22 | 22.0% |
| | High school | 47 | 47.0% |
| | Graduate or above | 20 | 20.0% |
| Occupation of Father | Government Employee | 29 | 29.0% |
| | Private Employee | 33 | 33.0% |
| | Self Employed | 30 | 30.0% |
| | Unemployed | 8 | 8.0% |
| Occupation of Mother | Government Employee | 8 | 8.0% |
| | Private Employee | 10 | 10.0% |
| | Self Employed | 13 | 13.0% |
| | House wife | 69 | 69.0% |
| Monthly income of the family | Less than 10,000 | 4 | 4.0% |
| | 10,001 20,000 | 21 | 21.0% |
| | 20,001-30,000 | 29 | 29.0% |
| | More than 30,001 | 46 | 46.0% |
| Mostly used handheld devices | Tab | 2 | 2.0% |
| | Laptop | 0 | 0.0% |
| | Mobile phones | 72 | 72.0% |
| | All of the above | 26 | 26.0% |
| Duration of using handheld devices | 4 hours | 44 | 44.0% |
| | 6 hours | 26 | 26.0% |
| | 8 hours | 21 | 21.0% |
| | More than 8 hours | 9 | 9.0% |

**Objective 2:** To assess the pre-test knowledge among students.

**Table 2:** Frequency & Percentage distribution of pre-test level of knowledge

| Criteria measure of pretest knowledge score | |
|---|---|
| Score Level (N = 100) | Pre-Test f (%) |
| Poor Knowledge (0-10) | 59 (59%) |
| Average Knowledge (11-20) | 40 (40%) |
| Good Knowledge (21-30) | 1 (1%) |

Maximum Score = 30, Minimum Score = 0

**Objective 3:** To assess the pre-test knowledge level among students.

**Table 3:** Pre-test level of knowledge

| Descriptive Statistics | Mean | S.D. | Median Score | Maximum | Minimum | Range | Mean% |
|---|---|---|---|---|---|---|---|
| Pretest knowledge | 10.30 | 3.767 | 10 | 23 | 1 | 22 | 34.33 |

Maximum Score = 30, Minimum Score = 0

**Objective 4:** To assess the post level knowledge among students

**Table 4:** Frequency & Percentage distribution of post-test level of knowledge

| Criteria measure of post test knowledge score | |
|---|---|
| Score Level (N = 100) | Post Test f (%) |
| Poor Knowledge (0-10) | 1 (1%) |
| Average Knowledge (11-20) | 48 (48%) |
| Good Knowledge (21-30) | 51 (51%) |

Maximum Score = 30, Minimum Score = 0

**Objective 5:** To assess the post-test level of knowledge among students.

**Table 5:** Post-test level of knowledge

| | | | | | N = 100 | | |
|---|---|---|---|---|---|---|---|
| **Descriptive Statistics** | **Mean** | **S.D.** | **Median Score** | **Maximum** | **Minimum** | **Range** | **Mean%** |
| posttest Knowledge | 20.27 | 2.853 | 21 | 24 | 10 | 14 | 67.57 |

Maximum = 30, Minimum = 0

**Objective 6:** To compare knowledge score in pre-test and post-test.

**Table 6:** Comparison of frequency & percentage distribution of pre-test and post-test level of knowledge, N = 100

| Criteria Measure of Knowledge Score | | |
|---|---|---|
| Score Level (N = 100) | Pre-Test f (%) | Post Test f (%) |
| Poor Knowledge (0-10) | 59 (59%) | 1 (1%) |
| Average Knowledge (11-20) | 40 (40%) | 48 (48%) |
| Good Knowledge (21-30) | 1 (1%) | 51 (51%) |

Maximum Score = 30 Minimum Score = 0

**Table 7:** Comparison of pre-test and post-test Scores of knowledge, N = 100

| Paired T Test | Mean ± S. D. | Mean% | Range | Mean Diff. | Paired T Test | P value | Table Value at 0.05 |
|---|---|---|---|---|---|---|---|
| Pretest Knowledge | 10.3±3.767 | 34.33 | 1-23 | 9.970 | 19.58 *Sig | <0.001 | 1.98 |
| Posttest Knowledge | 20.27±2.853 | 67.57 | 10-24 | | | | |

Maximum = 30Minimum = 0, *Significance Level 0.05

**Table 8:** Comparison of descriptive statistics of pre-test and post-test Scores of knowledge representing effectiveness, N = 100

| Diagram Showing Individual Score Gain (Effectiveness) | | | | | | |
|---|---|---|---|---|---|---|
| **Mean%** | **Pre Test Knowledge** | **Post test knowledge** | **Difference** | **Pre test knowledge score%** | **Posttest knowledge score%** | **Difference%** |
| Average | 10.30 | 20.27 | 9.97 | 34.33 | 67.57 | 33.23 |

**Table 9:** Table Showing Association of Scores and Demographic Variables

| Association of Pretest Knowledge Scores with Selected Socio-Demographic Variables | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Variables | **Options** | **Good Knowledge** | **Average Knowledge** | **Poor Knowledge** | **Chi Test** | **P Value** | **df** | **Table Value** | **Result** |
| Age group | 18-19 years | 1 | 12 | 8 | 8.292 | 0.217 | 6 | 12.592 | Not Significant |
| | 20-21 years | 0 | 14 | 30 | | | | | |
| | 22-23 years | 0 | 13 | 19 | | | | | |
| | More than 23 years | 0 | 1 | 2 | | | | | |
| Gender | Male | 0 | 7 | 16 | 1.547 | 0.461 | 2 | 5.991 | Not Significant |
| | Female | 1 | 33 | 43 | | | | | |
| Religion | Sikh | 1 | 14 | 22 | 6.916 | 0.329 | 6 | 12.592 | Not Significant |
| | Hindu | 0 | 12 | 26 | | | | | |
| | Muslim | 0 | 14 | 10 | | | | | |
| | Christian | 0 | 0 | 1 | | | | | |
| Class | B.Sc. Nursing 4th Semester | 1 | 23 | 30 | 1.285 | 0.526 | 2 | 5.991 | Not Significant |
| | B.Sc. Nursing 5th Semester | 0 | 17 | 29 | | | | | |
| Habitat | Urban | 0 | 18 | 35 | 3.102 | 0.212 | 2 | 5.991 | Not Significant |
| | Rural | 1 | 22 | 24 | | | | | |
| Accommodation | Hostel | 0 | 9 | 20 | 10.281 | 0.036 | 4 | 9.488 | Significant |
| | P.G/flat | 1 | 20 | 13 | | | | | |
| | Day scholar | 0 | 11 | 26 | | | | | |
| Types of Family | Joint | 1 | 13 | 12 | 4.707 | 0.095 | 2 | 5.991 | Not Significant |
| | Nuclear | 0 | 27 | 47 | | | | | |
| Education of Father | No formal education | 0 | 1 | 6 | 3.888 | 0.692 | 6 | 12.592 | Not Significant |
| | Primary school | 0 | 6 | 7 | | | | | |
| | High school | 0 | 16 | 19 | | | | | |
| | Graduate or above | 1 | 17 | 27 | | | | | |
| Education of Mother | No formal education | 0 | 6 | 5 | 2.245 | 0.896 | 6 | 12.592 | Not Significant |
| | Primary school | 0 | 8 | 14 | | | | | |
| | High school | 1 | 18 | 28 | | | | | |
| | Graduate or above | 0 | 8 | 12 | | | | | |
| Occupation of Father | Government Employee | 0 | 11 | 18 | 8.956 | 0.176 | 6 | 12.592 | Not Significant |
| | Private Employee | 1 | 8 | 24 | | | | | |
| | Self Employed | 0 | 16 | 14 | | | | | |
| | Unemployed | 0 | 5 | 3 | | | | | |
| Occupation of Mother | Government Employee | 0 | 1 | 7 | 4.452 | 0.616 | 6 | 12.592 | Not Significant |
| | Private Employee | 0 | 5 | 5 | | | | | |
| | Self Employed | 0 | 7 | 6 | | | | | |
| | House wife | 1 | 27 | 41 | | | | | |
| Monthly income of the family | Less than 10,000 | 1 | 2 | 1 | 29.291 | 0.000 | 6 | 12.592 | Significant |
| | 10,001 20,000 | 0 | 12 | 9 | | | | | |
| | 20,001-30,000 | 0 | 12 | 17 | | | | | |
| | More than 30,001 | 0 | 14 | 32 | | | | | |
| Mostly used handheld devices | Tab | 0 | 1 | 1 | 4.828 | 0.305 | 4 | 9.488 | Not Significant |
| | Laptop | 0 | 0 | 0 | | | | | |
| | Mobile phones | 1 | 33 | 38 | | | | | |
| | All of the above | 0 | 6 | 20 | | | | | |
| Duration of using handheld devices | 4 hours | 0 | 21 | 23 | 8.932 | 0.177 | 6 | 12.592 | Not Significant |
| | 6 hours | 0 | 6 | 20 | | | | | |
| | 8 hours | 1 | 8 | 12 | | | | | |
| | More than 8 hours | 0 | 5 | 4 | | | | | |

## Discussion

The discussion deals with result of the study. The study was conducted a pre-experimental study to assess the effectiveness of structured teaching program on knowledge regarding text neck syndrome among students of Selected College of Nursing, Mohali. For the study, we chose purposive sampling technique and sample size was 100 nursing students. The finding of the study was based on objectives. In Pre-Test, frequency of nursing students i.e., 59% of participants had low knowledge levels, 40% had moderate knowledge and only 1% had a high level of knowledge. The findings were similar to the study supported by Latha p, Karthik, A. Anbarasu *et al*., 2020 [3] the result of the study showed that in pre-test 54% of students had inadequate level of knowledge and 46% had moderate level of knowledge. In post-test, only 1% of participants showed poor knowledge, 48% of participants showed average knowledge, and 51% of participants showed good knowledge, a substantial increase from the pre-test (only 1% previously). The findings were similar to the study supported by Latha p, Karthik, A. Anbarasu *et al*., 2020 [3] the result of the study showed that in post-test 2% having inadequate, 2% having moderate, 96% having adequate level of knowledge. So, the conclusion of the study is that the structured teaching programme was effective in improving the knowledge of the students. The association between selected socio demographic variables with pre-test knowledge scores was not found to be significant except

accommodation and monthly income of family because according to accommodation a significant association was found ($p$ = 0.036) and According to Monthly Family Income a significant association was found ($p$ = 0.000). Hence, indicating that both accommodation type and monthly family income influenced pre-test knowledge scores. Whereas in a similar study by Pinto Anno, S Rekha, *et al*., 2021 [44] the association between pre-test and selected socio demographic variables showed that the pre-test knowledge scores was influenced by year of study ($p$<0.05), family monthly income ($p$<0.05) and source of information ($p$<0.05). Before collection of the data the investigator gave a brief introduction of self, purpose and background of the study to gain confidence.

## Conclusion

On the basis of result data analysis-conclusion of the study is that the structured teaching programme was effective in improving the knowledge of the students.

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