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"Effectiveness of Structured Educational Intervention on Knowledge Regarding Text Neck Syndrome Among Nursing Students"

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Abstract:

Introduction: In the digital era, excessive use of mobile devices has led to various musculoskeletal disorders, one of which is Text Neck Syndrome. This condition is caused by prolonged forward head posture while using smartphones, leading to neck pain, stiffness, and other complications. Objective:1.To assess the knowledge and implement a Structured educational Intervention regarding text neck syndrome among the students. 2. To evaluate the effectiveness of a Structured educational Intervention on text neck syndrome among nursing students. 3. To determine the relationship between post-test knowledge scores on text neck syndrome and the selected variables. The study employed a pre-experimental design, utilizing a one-group pre-test and post-test approach. 30 nursing students were selected for this study using a convenience sampling technique. The study employed a structured knowledge questionnaire on text neck syndrome to collect data from study participants, and the tool was validated by five subject experts. Descriptive and inferential statistical techniques were applied to analyse the gathered data. Results: According to the study's findings, 83.3% had poor knowledge, 16.6% had average knowledge, and 0% had good knowledge regarding text neck syndrome. The mean test scores and SD in the pre-test on knowledge regarding the Text Neck Syndrome were 9.50 and 2.52, respectively, and increased in the post-test mean score and SD, being 17.7 and 3.21, respectively. As the t-test value is (t = -17.654, p=0.00), and the p-value is 0.00, which is less than the conventional 5% level of significance, this means the knowledge of participants has significantly changed. Discussion: This study makes a valuable contribution by highlighting and addressing the existing gap in health awareness regarding Text Neck Syndrome (TNS) among nursing students. Implementing structured educational programs in schools and colleges can help minimize the risk of developing TNS. Conclusion: The study concludes that post-test knowledge scores showed no significant association with demographic

variables, except for the father's occupation. It also demonstrates that a structured education intervention was effective in improving students' knowledge of text neck syndrome.

Keywords: Text neck syndrome, smartphone, musculoskeletal disorder

Introduction:

Cell phones have become an essential part of modern life, used not only for communication but also for internet access and messaging. However, prolonged use often leads to "text neck syndrome," a condition caused by repeatedly bending the neck while using devices. This issue is increasingly common among youth.

Sustained forward head posture can cause changes in the cervical spine, ligament strain, intervertebral disc degeneration, and even reduced lung capacity. Children are particularly vulnerable due to their body proportions. Globally, musculoskeletal disorders are a major health burden, with neck pain being a leading cause of disability among adolescents.

Despite its growing prevalence, text neck syndrome is rarely addressed in nursing education. Early educational interventions for nursing students can help prevent long-term complications such as chronic pain, reduced productivity, absenteeism, and early career termination.

The study was undertaken in response to increased smartphone use among college students, which places them at higher risk of developing text neck syndrome.

Methodology

The study design that played out in conducting this research was pre-experimental pre-test post-test design because it targeted to examine the efficacy of STP on text neck syndrome. A total of 30 students of nursing School of nursing, Cuttack, were used as the sample. The sampling method used was the convenient sampling method. The use of self-administered structured questionnaire was used to determine knowledge. The descriptive and inferential statistics analysed the data collected.

Results:

The most respondents that is 20 students (66.6% of the total), we're aged 19-20 years. Meanwhile 10 respondents (33.3%) we're in the age range of 17-18. Gender has the frequency of 24 (80%) were female and 6 (20%) were male. Education of the father of the respondents are majorly 17(56.6%) were graduate, minorly it was same frequency 3(10%) of both primary

education and lost graduation and moderately it was 7(23.3%) were completed higher secondary education. The education of mother of the respondents are majorly 13(43.3%) were completed their higher secondary education, minorly it was 1(3.3%) were post-graduate and others are 7(23.3%) were only completed primary education and 9(30%) were graduate. Most of the respondents, 18 individuals (60%) were from nuclear family, meanwhile 12 individuals (40%) were from joint family. The occupation of the father of the respondents are majorly 9(30%) were farmer, 5(16.6%) were government employees and others have the fame frequency of 8(26.6%) were business man and private employees. Occupation of mother of the respondents are majorly 23(76.6%) were housewives, minorly 2(6.6%) were government employees and moderately it was 4(16.6%) were private employees. Annual income of the family of the respondents have major frequency 19(63%) had the income of <1 lakh, minor frequency is 3(10%) had the income of >2 lakh and moderate frequency is 8(26.6%) had the income between 1 lakh - 2 lakh. Area of residence of the respondents have the frequency of 17(60%) were from urban area and 12(40%) were from rural area. Number of siblings of the respondents have the major frequency of 15(50%) has siblings, minor frequency of 0(0%) had >2 siblings and others are 12(40%) had 1 sibling and 3(10%) had zero siblings.

Table 1: The efficacy of the structured educational intervention is evaluated through the comparison of knowledge levels on the Text Neck Syndrome on the pre-test and post-test.

Score	Mean	SD	Mean Difference	df	Paired T test	P value
Pre-test	9.53	2.52	8.37	29	-17.654	0
Post-test	17.9	3.21				

The above table No. 1 revealed the comparison of the knowledge scores on text neck syndrome before and after a Structured Educational intervention in GNM Nursing students. As the t-test value is (t = -17.654, p=0.00), and p-value is 0.00 which is less than the conventional 5% level of significance, this means the knowledge of participants has significantly changed. The mean test scores in pre-test on knowledge regarding the Text Neck Syndrome were 9.50 (38%), which

has increased in post-test mean score 17.7 (70.8%). Therefore, the knowledge on Text Neck Syndrome has significantly increased post-intervention among GNM students.

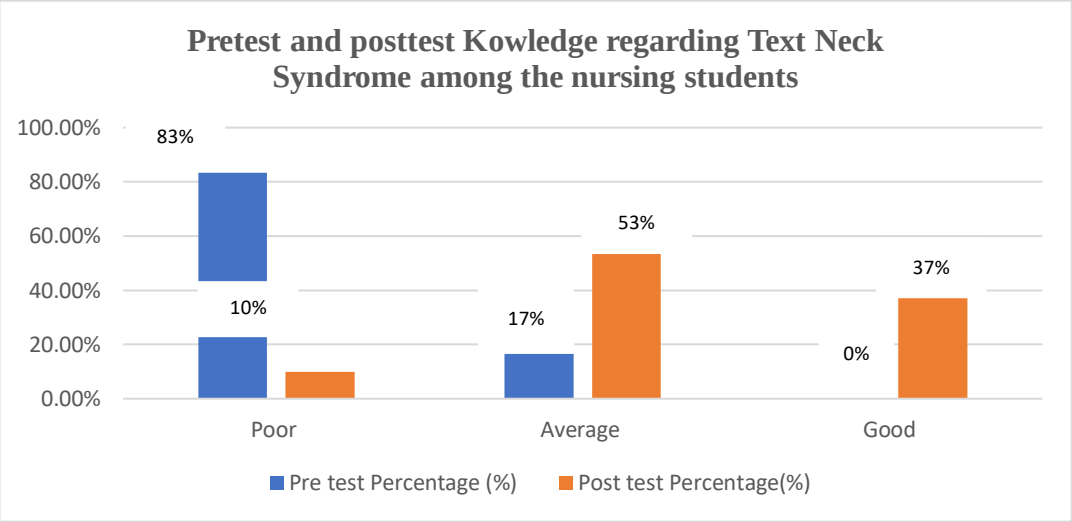

Figure 1. shows the knowledge score of Pre-test and post-test knowledge regarding text neck syndrome among nursing students.

Table 2: Association between Level of Knowledge and Socio- demographic Variables.

N=30

Sl no.	Demographic Variable	Categories	Test Score			X2	P-Value	Level of significance
			Poor	Average	Good			
1.	Age (years)	17 – 18	0	7	3	2.463068 df=2	.2918	NS
		19 - 20	3	9	8			
2.	Gender	Male	1	4	1	1.401515 df=2	.4962	NS
		Female	2	12	10			
3.	Education	GNM 1st yr	2	9	4	1.40151	.4962	NS

		GNM 2nd yr	1	7	7	5 df=2		
4.	Occupation of Father	Business an	0	2	6	22.73864 df=6	.0008	S
		Private Employee	0	6	2			
		Farmer	0	6	3			
		Govt. Employee	3	2	0			
5.	Occupation of mother	Housewife	2	10	10	3.608815 Df=4	.4615	NS
		Govt. Employee	0	2	0			
		Private Employee	1	4	1			
6.	Type of family	Nuclear	3	11	4	5.071023 df=2	.07922	NS
		Joint	0	5	7			
7.	Area of residence	Rural	0	9	3			NS
		Urban	3	7	8	4.502841 df=2		
8.	Father's education	Primary education	0	3	0	5.385791 df=6	.1052	NS
		Higher secondary education	0	4	3			
		Graduates	3	7	7			
		Postgraduate	0	2	1			

9.	Mother's education	Primary education	0	5	3	2.690183 df=6	.8466	NS
		Higher secondary education	2	6	4			
		Graduates	1	4	4			
		Postgraduate	0	1	0			
10.	Number of siblings	No sibling	0	1	2	2.508523 df=4	.6431	NS
		One sibling	2	7	3			
		Two Siblings	1	8	6			
		More than two siblings	0	0	0			
12.	Annual income of the family	< 1lakh	3	11	5	3.732057 df=4	.4434	NS
		1lakh-2lakhs	0	4	4			
		>2lakhs	0	1	2			

The table no. 2 above demonstrates that there is no statistical significance of the post -test level of knowledge on text neck syndrome in relation to the choice of sociodemographic variables Age, gender, education, area of residence, father and mothers education, type of family, annual family income occupation of mother and number of siblings, but that there is association of knowledge of text neck syndrome with occupation of father.

Discussion

The pre-test results of the present study showed that most students (83.3%) had poor

knowledge of Text Neck Syndrome, while 16.6% demonstrated an average level of knowledge and none had adequate knowledge. In contrast, the post-test findings indicated noticeable improvement: 53.3% of students attained average knowledge, 36.6% achieved good knowledge, and only 10% remained in the poor knowledge category. This marked increase in knowledge levels following the structured teaching programme highlights the effectiveness of educational interventions in improving students' understanding of Text Neck Syndrome.

A comparable study by Avnee Naik, Sucheta Yangad et al. (2023) reported that the mean knowledge score increased from 0.8 in the pre-test to 7.16 in the post-test. The calculated *t*-value was 37.9 with 99 degrees of freedom. These findings revealed that a statistically significant improvement in nursing students' knowledge regarding Text Neck Syndrome following the planned educational intervention programme.[5]

The correlation study comparing the between the knowledge of Text Neck Syndrome and the chosen demographics variables in the current study did not have any statistically significant result between the posttest scores of knowledge and the majority of sociodemographic variables such as age, gender, education, parents educational status, area of residence, type of family, annual family income, mothers occupation, number of siblings. Nevertheless, there was a notable correlation between understanding of Text Neck Syndrome and the father occupation.

A similar case study by Latha P., Karthi R., A. According to Anbarasu et al. (2020), the levels posttest knowledge on Text Neck Syndrome were significant with selected sociodemographic variables including age, gender, mothers education, parents occupations, place of residence, daily duration of mobile phone use and years of mobile phone usage at p 0.05. There was however, no significant value regarding the level of post-test knowledge to be related to the fathers education and monthly income of the family.[6]

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