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OCCUPATIONAL THERAPY INTERVENTION ON TEXT NECK SYNDROME AMONG COLLEGE STUDENTS

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Abstract

Objective: This study was performed to value the effect of occupational therapy intervention on text neck syndrome among college students using smart phone and its addiction scale.

Methodology: This cross- sectional study was conducted randomly among the occupational therapy students in our college for three months. The age group of 18-24 who uses the mobile phone ≥3 hours each day was used in the study along with a Neck disability questionnaire**.** The sample size of the study was 70 out of which 14 were included for the intervention. Out ofthe 14, 7 were part of control group and 7 were in the experimental group and statistically evaluated.

Result: The age group range from 18-24years.Out of the 70 students 40 Female and 30 male. 14 students were involved in medical intervention of occupational therapy with 7 in experimental group and 7 in control group. Based on gender 3 male and 4 female and 5 Male and 2 female in experimental and control group respectively was taken and based on the age 6 students < 21 age and 1 student > 21 in experimental group. In control group, 4 students were < 21 and 3 students were > 21 age. Effectiveness of Neck Pain Management on Text neck syndrome for Experimental Group is 9.71 and control group was 5.34 with p value of 0.005 mean high significant.

Conclusion: Mobile technology has advanced so much; time spends on handheld devices is increasingly high. Text neck is a growing health concern affecting millions of people all over the world. This study supports the effect of Occupational therapy intervention on Text neck syndrome statically.

INTRODUCTION

In recent years the usage of mobile is increasing day by day. Smartphone is the most common device used by all age group especially among adolescent population. The Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) are a comprehensive analysis of health loss attributed to diseases, injuries, and risk factors across 204 countries and territories.[1,2,3]The World Health Organization (WHO) has ranked neck pain as the 8th most common disability for 15–19 year olds of any health condition, which is higher than other well-known adolescent health problems.[4] The term 'text neck syndrome' was first coined by Dr. Dean L. Fishman as an overuse injury. The injury might be due to poor posture, while using smartphone the normal curvature of the cervical spine is flattened and stretched and the neck goes into forward flexion.[5] Individuals using their phones continuously suffer from fatigue, headaches, dizziness, skin symptoms, a burning sensation, sleep disorders, and anxiety. Apart from these psychological disorders, they may suffer from many physical disorders anxiety, social dysfunction; insomnia text neck syndrome is one of the major problems.[1, 6]

Using mobile phones for prolonged duration increases the force on cervical spine vertebrae with more and more tilting of the head causing spinal curvature which results in text neck syndrome. Text neck syndrome" is a major concern nowadays supported by a recent growing reporting of data which suggests that it might be considered an emerging 21st-century syndrome. Text neck syndrome is a type of stress injury that comprises the onset of degeneration of the cervical spine due to the frequently repeated forward and downward head flexion while we "text" for long periods looking at a smartphone device or looking over a mobile, tablet, or laptop.[10,11]Text neck syndrome has become the most common cause of musculoskeletal neck pain in the young age group due to overuse of smartphones and devices, as it is estimated that children and adolescents spend on average 5 to 7 hours on handheld devices.[12] It is estimated that over 75% of the world's population use mobile phones for hours daily with their heads flexed and downwards.[13]

Text neck can cause permanent arthritic changes to the muscles, ligaments, and nerves of the neck if left untreated for a long time. It may also lead to some serious damage, such as flattening of the spinal curve, early onset of arthritis, spinal misalignment, spinal degeneration, disc compression, disc herniation, etc[14]. The dependence of mobile phone is increasing rapidly and people spend long hours on mobile phone which may lead to various musculoskeletal problems.

In this study we have addressed this issue and suggested a convincing practice of occupational therapy to counter the Text Neck Syndrome.

MATERIALS AND METHODS

A cross sectional study was conducted among the undergraduate students of occupational therapy division in our college with the age group of 18 to 24 years in Chennai, Tamil Nadu for duration of three months from 2022-2023. The sample size was 70 students using convenient sampling technique.

Inclusion criteria

The students of age between 18-24 years and those who use their smart phone for not less than 3 hours on daily bases were included with a raw score greater than 30.

Exclusion criteria

Students who do not have smart phone addiction with a raw score less than 30 in neck disability index were excluded from the study. Students with any other cervical abnormalities like spondylosis, spondylolisthesis were not included.

Concern form:

The Permission to conduct this study was granted by the institution and the patients were requested to sign the informed consent and thestudy procedure and techniques were also explained. Pretest and post-test were conducted within the proposed timeperiod and Pretest and posttest results were analyzed to check the effectiveness of Occupational therapy interventions.

Statistical studies:

All the data obtained from the results were analysed using statically software's. Descriptive analysis was done in the form of mean and standard deviations or t-Test wherever appropriate for statically evaluation. A p-value of <0.05 is taken as a threshold for statistical significance.

RESULTS

The Table 1, Figure 1.1 shows the overall distribution of the under graduate students of the Occupational therapy in the college with respect to age and gender. Overall Population of mean value based on gender, for experimental and control groups. In experimental group, the mean value of male 71.4 & female 28.6 and male 42.9 and female 57.1 in the control group respectively.

Table 1: Distribution of Demographic Variables among Participants

	GENDER	
	EXPERIMENTAL GROUP	CONTROL GROUP
MALE	71.4	42.9
FEMALE	28.6	57.1
	AGE	
	EXPERIMENTAL GROUP	CONTROL GROUP
19	0.66	14.3
21	5.77	71.4
22	14.3	0
23	14.3	14.3
24	14.3	0

Shows that the classification of Overall population by the Gender& Age category

FIGURE 1.1: Distribution of Demographic Variables among Participants- Gender

(Experimental Group and Control Group):

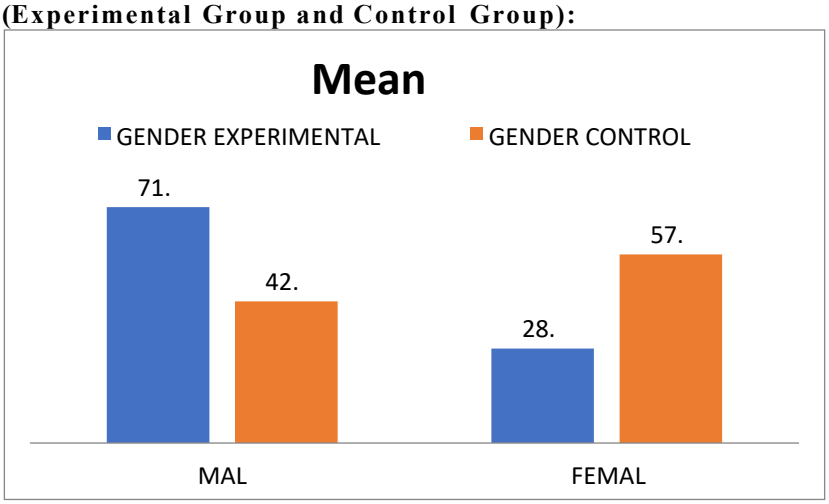


Figure 1.1 shows that the Overall Population of mean value for experimental and control groups.

The result showed that male contributed for the highest number of cases when compared to women in both experimental and control group. It also highlighted the age wise distribution of students in the study in both experimental as well as control group with majority of students under the age of 21yrs ad age 23 contributed for equal percentage in both experimental and control group. For further details refer Table 1 & Figure 1.2.

Figure 1.2: Distribution of Demographic Variables among Participants- Age (Experimental Group andControl Group):

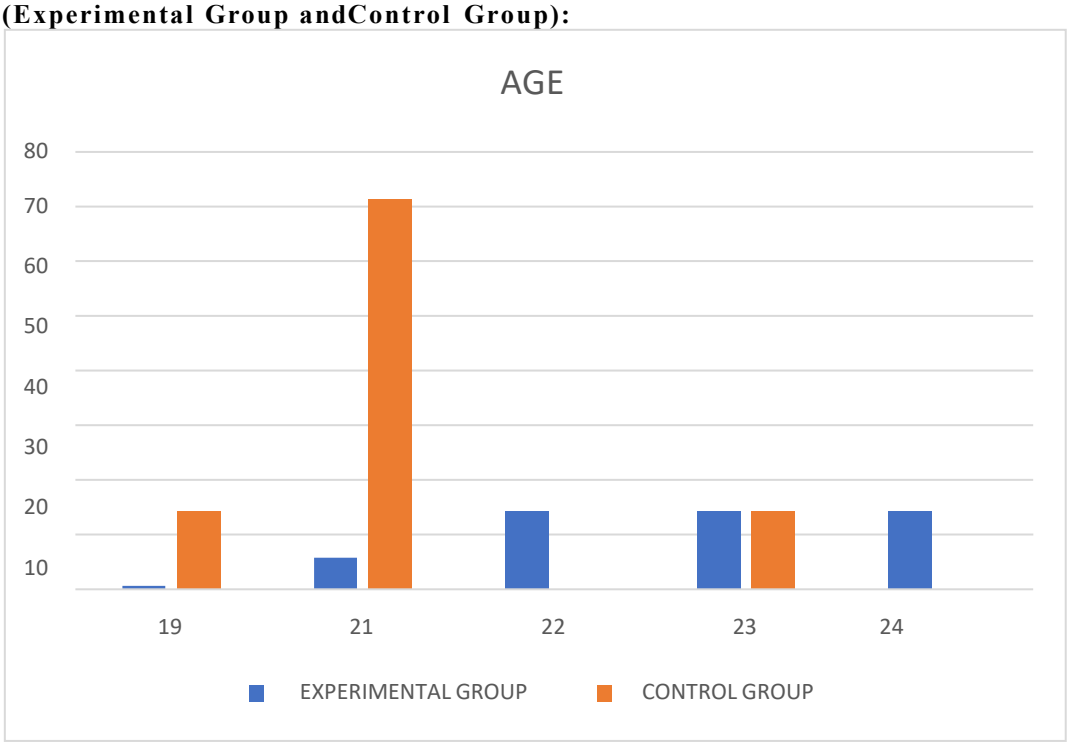


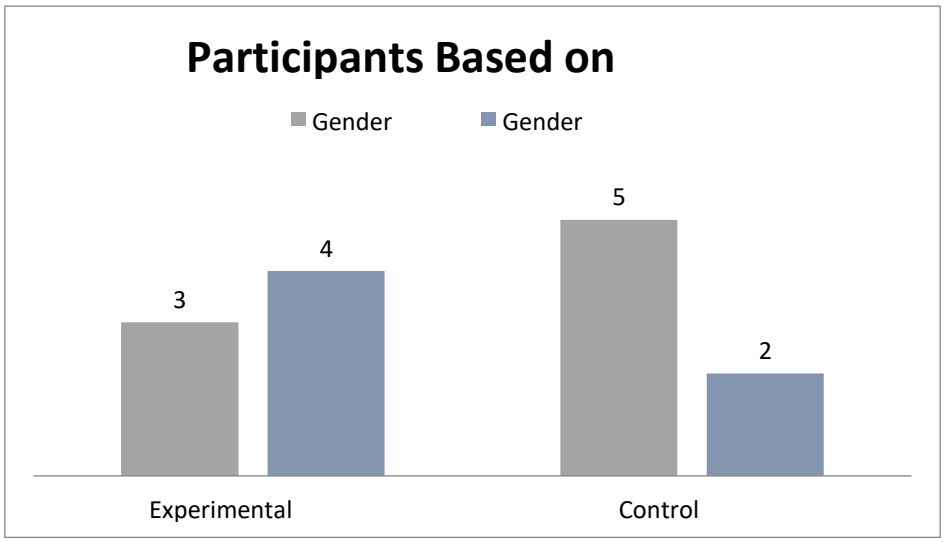
Table 2 & Figure 2 shows the Participation of the Experimental group and Control group Population is based on Gender. Based on gender, 3 Male and 4 Female participated in experimental group. Male 5 and female 2 participated in control group. Table 3 & Figure 3 shows the Participation of the Experimental group and Control group Population in the Intervention of Text Neck Syndrome based on Age. Based on Age, < 21 age of 6 members and > 21 age of 1 member participated in experimental group. In control group, < 21 age of 4 members and > 21 age of 3 members participated. Through six- weeks intervention study there was a significant difference found between control and experimental group. The Pre and Post test evaluation was done and the results were analyzed by t-test and scores were tabulated.

Table 2: Participation of the Experimental Group and Control Group Population in the Intervention of Text Neck Syndrome based on Gender

	Gender	
	Male	Female
Experimental group	3	4
Control group	5	2

Foot note: Shows that the Population of experimental group and control group participated in this study (gender)

Figure 2: Participation of Population in the Intervention of Text Neck Syndrome Based On Gender:



Out of the 70 over all population taken for the study 14 students were subjected to occupational therapy interventions and in which 7 were taken as control group and 7 were taken as experimental group. Here in the table 2 & 3 showing the results of the control group and experimental group based on the gender and age. The results showed that the out of the 7 in the experimental group 3 were male and 4 were female, while in control group 5 were male and 2 were female. With respect to the age the result shows that in experimental group 6 students were under the age of 21 and 1 above 21. Similarly in the control group 4 students were below 21 and 3 belong to the age above. The above details can be visualized in Figure 2 ad 3.

Table 3: Participation of the Experimental Group and Control Group Population in the Intervention of Text Neck Syndrome Based on Age

	AGE	
	< 21 years	>21 years
Experimental group	6	1
Control group	4	3

Foot note: Shows that the Population of experimental group and control group participated in this study (Age)

Figure 3: Participation of Population in the Intervention of Text Neck Syndrome Based on Age

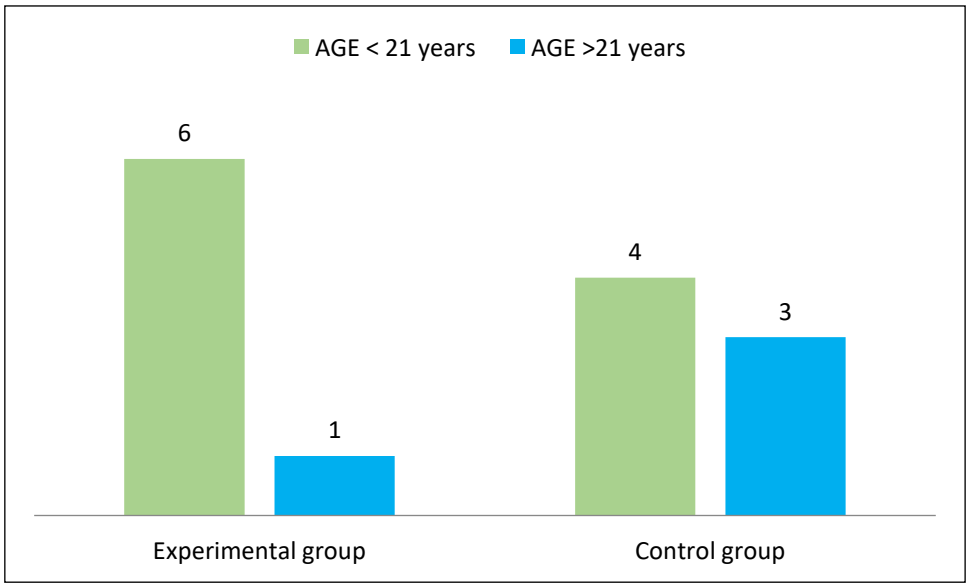


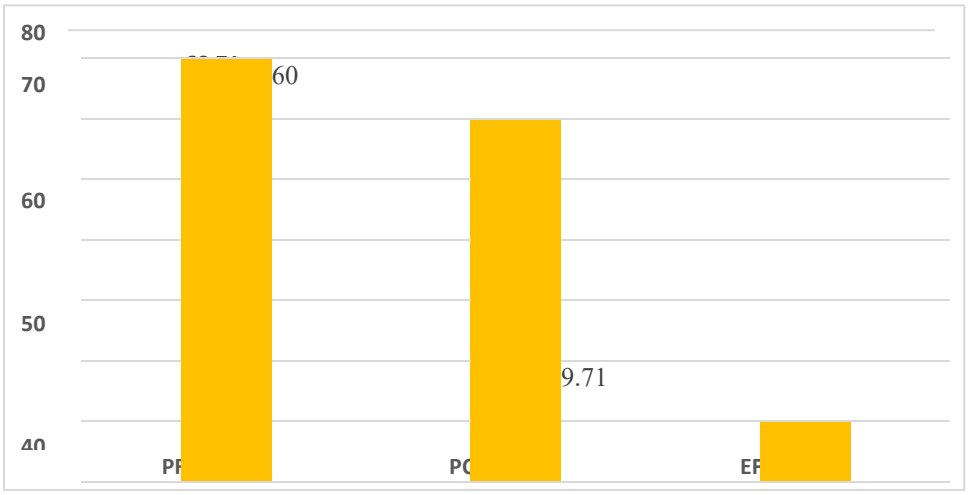
Table 4 and Figure 4 display the Comparison of mean value for experimental group by Pre test and Post test. Mean value of Pre test is 69.71 and the Post test is 60.00, Effectiveness of Neck Pain Management on Text Neck Syndrome for Experimental Group was 9.71 which is of great statistical significance. Table 5 & Figure 5 Compare the mean value for control group by Pre test and Post test. Mean value of Pre test is 65.43 and the Post test is 60.29. Effectiveness of Neck Pain Management on Text Neck Syndrome (TNS) for Control Group is 5.34 and was statistically significant.

Table 4: Effect of Neck Pain Management on Text Neck Syndrome forExperimental Group

STATISTICS	MEAN	S.D	NECK PAIN t- TEST VALUE & p-VALUE
PRE – TEST	69.71	6.16	t = 5.491
POST-TEST	60.00	7.75	P = 0.002
EFFECTIVE	9.71	4.68	P< 0.001 (level of significant)

Foot note: Shows that the Comparison of mean value for experimental groupby Pre-test and Post-test. Mean value of Pretest is 69.71 and the Post testis 60.00.

Figure 4: Effect of Neck Pain Management on Text Neck Syndrome for Experimental Group



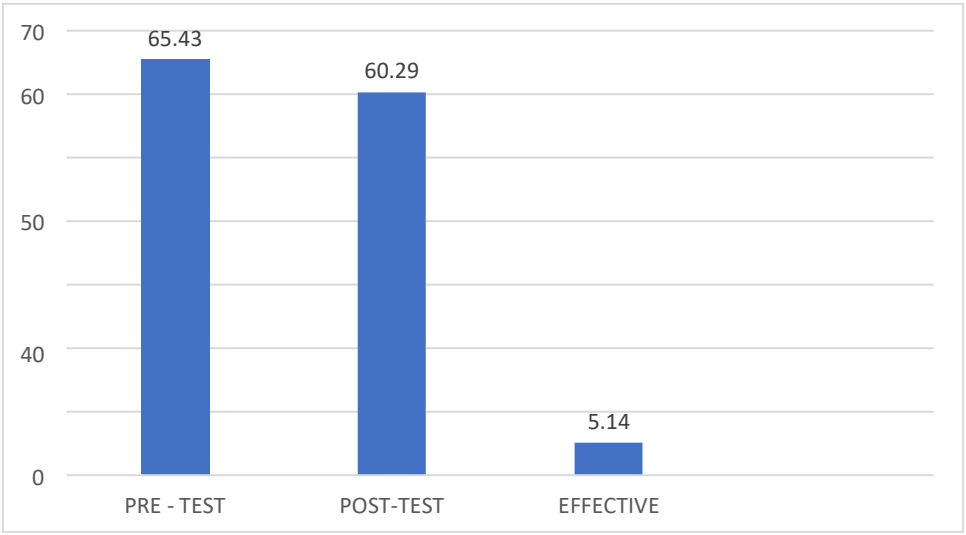
Foot note: Shows that the level of mean value for Pre test and Post test for the Experimental group and it shows the effectiveness of 9.71 the change by comparison of mean value of Pre test and Post test.

Table 5: Effect of Neck Pain Management on Text Neck Syndrome for Control Group

STATISTICS	MEAN	S.D	NECK PAIN t-TEST VALUE & p- VALUE
PRE – TEST	65.43	4.72	t = 4.50
POST-TEST	60.29	3.35	p = 0.004
EFFECTIVE	5.14	3.02	P < 0.004 (level of significant)

Foot note: shows that the Comparison of mean value for control group by Pre test and Post test. Mean value of Pre test is 65.43 and the Post test is 60.29.

Figure 5: Effect of Neck Pain Management on Text Neck Syndrome for Control Group



Foot note: shows that the level of mean value for Pre test and Post test for the control group and it shows the effectiveness of 5.34 by comparison of mean value of Pre test and Post test.

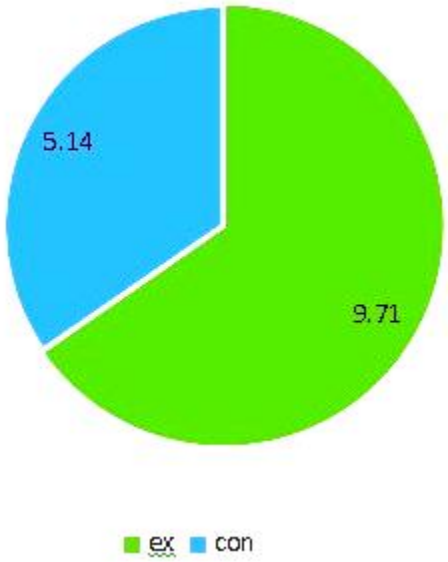
Table 6 shows the overall Comparison of the Effectiveness between Experimental and Control group. In Experimental group, the mean value of 9.71 and in control group 5.14. P value of 0.005 which means it is highly significant. Result of the study shows that Occupational Therapy Intervention on Text Neck Syndrome appears to be beneficial for younger age group from this study. It is clear that there are individual differences in Population that should be taken into account when providing Occupational therapy intervention based on neck related Problems.

Table 6: Comparison of Effect Between Experimental and Control Group

	MEAN	**S.D**	**INDEPENDENT t = TEST VALUE p = TEST VALUE**
Experimental group	9.71	4.68	t = 2.17
Control group	5.14	3.02	p = 0.005 (level of significant)

Foot note: In experimental group, the mean value of 9.71 and in control group 5.14. P value of 0.005 which means it is highly significant.

Figure 6 shows that the overall Comparison of the Effectiveness between Experimental and Control group.



DISCUSSION:

In the present study age group of 18-24 years were taken into account and they were form the medical college in Chennai and it was similar to the study conducted in Lahore, Pakistan[14]. But the difference was that it is prevalence study of Text Neck Syndrome among the students of age group 18-23yrs. In this study we have tried the occupation therapy to counter attack the TNS. In this study major population were male (114.3) followed by the Female (85.7), but the Lahore study majority of students was female (144) and male (122).

The majority of participants in our study were addicted to smartphone and usage regarding the amount of daily use; most students use their phones for more than 4 h per day. Two studies, one in Korea and one in Brazil, found participants spent more than 4 h per day on their mobile phones. The prevalence of individuals using smartphones for more than 4 h per day is a worrying issue since the severity of musculoskeletal symptoms in the upper extremities is significantly connected to the amount of time spent on smartphones.[15] In addition, the continuous use of smartphone is not only related with the severity of neck pain but also the duration of pain.[16] In the present study we have not only looked for the prevalence of neck pain but also the occupational therapy interventions in the treatment of Text Neck Syndrome.

CONCLUSION

In today's world, where the mobile technology has advanced so much, there are growingly populations who spend more time on handheld devices. Result is prolonged flexion of the neck resulting in the "text neck". This condition is a growing health concern and potentially affecting millions of people all over the world. This study proved that there is a significant improvement after giving the Occupational therapy intervention based on neck. Hence this study provides evidence supporting the effect of Occupational therapy intervention on Text neck syndrome with statistically significant outcomes.

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