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An Observation Of Hyperextension Of Neck Limitation In Internship And Post-Graduate Students

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Abstract
For this study 40 dental students were selected,which included internship as well as post-graduate students. The criteria for selection of samples is no neck pain previously, the age group between 22 to 30 years, both gender included and those attending the patients for dental procedure during their course period. Allthe samples were placed in sitting position and the measurement of neck hyperexension was done with inch tape. After completion of data collection the statistical analysis was done, it showed dominantly no limitation in neck hyperextension.

HYPOTHESIS:
Dental students may develop neck hyperextension restriction as they perform dental procedure to patients and their neck posture is flexed position leads to neck flexors muscles becoming tight and develop neck hyperextension.

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I. Background

The neck hyperextension restriction is one of the health issues, generally, in human population. If the possible occurrence of neck hyperextension is not restricted it may lead to pain developed in the neck region and muscular spasm, tightness, etc. Restriction of neck movement also commonly, happens among those involved in occupational work.

This topic deals with the dental professionals who have more possibilities of getting neck hyperextension restriction. Because the dentist while performing the treatment to the patients keep their neck in flexed position throught out the treatment time. Asthe dental professionals give treatment for tooth ailments, the dentists keep their neck in flexed position and very nearer to the mouth of the patients during entire treatment period. Hence, it is understood that maintaining the neck flexion of the dentistson each patient, leads to the neck muscles getting tightness and ultimately results in hyperextension.

The purpose of this study is to identify the restriction of neck hyperextension in dental students. If the purpose of the study is elicited positively the physiotherapist can provide the therapeutic regimen and ergonomics protocols for their treatment comfortably and effectively.

In this study, young dental students have been selected because, initially they do notdevelop or do not have neck extension movement limitation, because the young pupil are very much active and show great interest in doing the dental service. And they do not know about the occupational hazards developed during the time of giving treatment. So this study is much important for the young generation of dental professionals.

This study has the delimitation of neck hyperextension which is observed on each dental student. The movement is measured by using inch tape, the inch tape measurements of neck movements is scientifically very much reliabile and valid as various articles have observed.

The assumption of this study is that if hyperextension of neck is affected the outcome of restriction may cause other complications and the dental professionalscan not perform their dental procedure to the patient effectively.

This study was engaged in one dental institution. The separate Performa was designed for the purpose of recording the neck hyperextension performed. The samples were collected in a day. Before the collection of thesamples permission was obtained from the authorities of the dental institution.

OBJECTIVE:
To determine the significantrestriction of neck hyperextension movement among the dental students.

SAMPLE DESIGN:
1. The samples include both internship students and post-graduate students in the dental institution
2. Both gender are included in samples
3. The age group of the samples is 22 to 30 years
4. All the samples should attend patients for the dental procedure
5. All the samples are selected from the same dental institution

MATERIAL:
Inch tape were used

METHODS:
The investigator personally visited the dental institution and assessed the neck hyperextension by using inch tape. The dentists were asked to placed in sitting position and investigator stand in front of the sample. Then, asked the sampleto perform neck hyper extension with mouth closed and maintain the neck hyperextension. The one end of the inch tape isplaced at the sternal notch and other end is placed on the chin of the sample to take the measurement and record the measurement in the Performa. The inch tape measurement will be carried out only one time.

STATISTICAL ANALYSIS

sample	neckext
1	16.5
2	17.5
3	18.5
4	21.5
5	21.0
6	16.0
7	18.5
8	18.5
9	18.0
10	18.5
11	16.0
12	18.5
13	20.0
14	16.5
15	19.0
16	18.5
17	21.8
18	20.8
19	18.5
20	19.5
21	20.0
22	16.5
23	17.5
24	18.0
25	22.5
26	14.5
27	19.0

28	18.5
29	18.5
30	18.0
31	16.5
32	20.0
33	19.0
34	20.0
35	19.0
36	16.0
37	18.5
38	18.0
39	19.0
40	18.5

Column1	
Mean	18.5275
Standard Error	0.268423
Median	18.5
Mode	18.5
Standard Deviation	1.697659
SampleVariance	2.882045
Kurtosis	0.288597
Skewness	0.083879
Range	8
Minimum	14.5
Maximum	22.5
Sum	741.1
Count	40

Frequency Table:		
Neckext	Obs Freq	Exp Freq
14.5	1	2.86
16	3	2.86
16.5	4	2.86
17.5	2	2.86
18	4	2.86
18.5	11	2.86
19	5	2.86
19.5	1	2.86
20	4	2.86
20.8	1	2.86
21	1	2.86

21.5	1	2.86
21.8	1	2.86
22.5	1	2.86

Chi-Square Goodness ofFitTest	
Chi-Square	34.9
DF	13
Pr>Chi-Square	0.0009

ANOVA						
Source ofVariation	*SS*	*df*	*MS*	*F*	*P-value*	*Fcrit*
Between Groups	112.3998	39	2.882045	65535	#NUM!	#NUM!
Within Groups	0	0	65535			
Total	112.3998	39				

II. Result:

The statistical analysis showed that, among 40 samples most then have normal neck hyperextension range of motion. But less number of sample have slight restriction. That is, according to thestatistics, no significant level of neck hyperextension is observed.

III. Discussion:

For this study, 40 dental students were selected. The selected samples either belonged to internship batch or post-graduate students of the selected dental institution. The measurements of neck hyperextension were done with the help of inch tape. The inch tape is a highly reliable and valid tool to measure the hyperextension, according books as well as the articles relevant to this field .The books and literature support the rationale of using inch tape measure the range form 18cm to 25cm. Of the 40 dental students selected. 10 dentals students experience the limitation of neck hyperextension which is found below the normal level. It may be due to the fact that the sample donot cooperate properly who feel uncomfortable. In this work, the researcher is male,whereas the neck movement is restricted to 10 dental students who are mostly female.

In small sample size most of them do not have neck extension limitation. Through this study,we should not come to the conclusion that the dental professionals do not have neck extension problems. There will be a hypothesis that when the dentist maintain neck flexion while giving treatment the neck flexion muscles develop tightness,and it will make them difficult to perform neck hyperextension. Research work in this topic is very much essential because if neck hyperextension limitation found it will lead the dentist to developoccupational hazards and cause difficultly in performing their service.

Many research article suggest that the inch tapehas a high level of reliability and validity for measuring the neck range of motion. Generally, previous research articles have found various aspects in relation to the measurement of neck range of motion,apart from dental professionals. Several previous articles have supporting views about this topic. Most of the previous, studies have measured the neck range motion by using inch tape among normal subjects. But ,few articles have shown the range of motion measured by inch tape for finding the pathological conditions. There is no evidence of previous articles showing the measurement related to neck range of motion leading to occupational hazards in the neck region.

IV. Conclusion:

From this study, most of the young dental students, with less exposure to clinical service, do not have restriction of neck hyperextension. So,it is concluded that with a large size of samples of young dental students the neck hyperextension may be measured to assess the hyperextentsion restriction.

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