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Prevalence of mechanical low back pain among school teachers in Palakkad district

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Abstract

The study is to find out the prevalence of mechanical Low Back Pain among the school teachers of Palakkad district. Teachers with heavy work load in school as well as in the home leads to various health issues. Continuous teaching hours among teachers of unaided schools and government schools also leads to the low back pain. Total 80 Samples were collected from the various schools in the Palakkad district which includes 40 male & 40 female teachers who aged from 25 to 56. SPSS version 22 was used to analyze the data. The result of the analysis says that total 51 (63.7%) teachers experienced Lower Back Pain in their life time. Among these sample, 13 were male (16.25%) teachers & 67 (83.75%) were female who experienced LBP. While comparing to male teachers, female teachers are more prone to LBP. Household chores, Duration of sleep and habit exercises is influencing the Low Back pain very much. The pain level and intensity of pain among the female teachers are more than the men. Pain intensity was measured by the Oswestry Low Back Pain Disability Questionnaire. Study concluded that there is a significant influence of Household chores, Habit of exercise and duration of sleep in controlling the Low Back Pain among the workers.

Keywords: LBP, mechanical, prevalence, cervical, thoracic, lumbar, sprain, strain

1. Introduction

Low back pain is the one of the common health issue of the human being. LBP affects almost all 80% of the people at some point in their lives. Low Back Pain is classified into Mechanical or Non mechanical low back pain. In most of the cases there will be a specific underlying cause. But this actual cause may not be identified or properly diagnosed. Actual challenge of all the pain management system is proper diagnosis and finding the actual reason behind the pain. When the victim is consulting a doctor because of pain, want an immediate recovery or solution. So physicians normally start the medication with pain killers. Whenever the victim gets the relief from the pain they will not be visiting doctor for further rehabilitation process. Mechanical reason is the common cause for the LBP. LBP due to mechanical problems such as muscle or joint strain are called mechanical LBP. Most of the LBP occurrences will disappear within a week. But some are more serious and need proper diagnosis and care. There are number of studies on prevalence of LBP among health workers, house wives and drivers. There is no studies were conducted on the Prevalence of LBP among teachers. This made me to opt this study. LBP cases among the human being all over the universe are increasing. Low Back Pain rate among the professional of sedentary life style and job nature are comparatively higher than the others. Prolonged duration of standing in the class rooms may leads to stress on the lower back. Majority of the teachers may not be aware about the proper body posture on sitting and standing. Some of are aware of body postures but cannot able to often follow. All the teachers in India are living a mechanical life. Same routines are followed by these people. They are not at all bothered about the health problems until the problem severely affecting them. The recent study proved that LBP is the mostly affected health issue that reduced productivity of the workers. So we can say that Low Back Pain is the common health issue among all the working groups not only in India but also in the Universe.

1. 2 Common reasons for Low Back Pain

The Spine is divided in to several section Cervical (7 vertebrae) neck region, the Thoracic

vertebrae (12 vertebrae) compose the chest sections and ribs attached in it. The Lumbar vertebrae (5 vertebrae) are the remaining which composes lower back. Low Back Pain can occur due to injury (For Example improper lifting techniques may cause Sprain, Strain, pull or spasm in one of this muscles). Between the vertebrae there are spongy pads of cartilage called discs that act like shock absorbers between the disc. Over pressure from over exertion can cause disc to shift or protrude and bulge, causing pressure on a nerve and results in pain. Serious injury to the spine or the vertebrae like fracture, dislocation are also leads to severe pain and which required proper treatment and care for long time. Some other reasons like trauma, inflammation in related tissues, tumors, degeneration and diseases to internal organs also leads to pain.

1.2.1 Mechanical Low Back Pain

Mechanical Low Back Pain which refers to the pain at the lower back, inside the spine, disks or related muscles, and soft tissues. Lumbosacral muscle strain, herniated disk, spondylosis, fractures, trauma are themain reasons of mechanical low back pain.

1.3 Study Objectives

- To study the prevalence of mechanical LBP among respondents in the study area.
- To examine factors determining mechanical LBP among the teachers in the study area.

1.4 Methodology & Data Source

The study is designed as pre- test random group design to find out prevalence of mechanical Low Back Pain in teachers of various schools in the Palakkad district in Kerala. Simple random sampling method (lottery method) was used to select the sample size of 80 which includes 40 males and 40 females the Palakkad district. The data was collected through scheduled questionnaire. Pain intensity was measured with the help of Oswestry Low Back Pain Disability questionnaire.

1.5 Analysis and Interpretation

The analysis of the data collected goes in tune with the objectives for the study. Regression has been fit to found out the factors determining LBP and chi square to find an association between gender and LBP.

Table 1: Gender Composition

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	40	50.0	50.0	50.0
	Female	40	50.0	50.0	100.0
	Total	80	100.0	100.0	

Table 1 shows the gender composition of the sample collected. Of the total 80 respondents, 50 percent are male (40 respondents) and 50percentage are female (40 respondents).

Table 2: Prevalence of LBP

			LBP Status				Total
			Always	Never	Occasionally	Often	
Gender of the Respondent	Male	Count	2	26	11	1	40
		% within Gender of the Respondent	5.0%	65.0%	27.5%	2.5%	100.0%
		% of Total	2.5%	32.5%	13.8%	1.3%	50.0%
	Female	Count	4	0	17	19	40
		% within Gender of the Respondent	10.0%	0.0%	42.5%	47.5%	100.0%
		% of Total	5.0%	0.0%	21.3%	23.8%	50.0%
Total	Count	6	26	28	20	80	
	% within Gender of the Respondent	7.5%	32.5%	35.0%	25.0%	100.0%	
	% of Total	7.5%	32.5%	35.0%	25.0%	100.0%	

The study classifies the frequencies of occurrence of LBP as never, occasionally, often and always. It is clear that of the 80 respondents, 26 male respondents do not suffer any LBP. While in the case of occasionally category 11 males are registered. We could see that as the frequencies of the pain

increases the female number is greater than the male (with 1 male and 19 female in often) and only 4 females with 2 males in the category always. Having seen a gender difference on the basis of pain a chi square was run.

Table 3: LBP score of the respondents

			LBP Disability range				Total
			No Disability	Minimum Disability	Moderate Disability	Severe Disability	
Gender of the Respondent	Male	Count	14	23	3	0	40
		% within Gender of the Respondent	35.0%	57.5%	7.5%	0.0%	100.0%
		% of Total	17.5%	28.8%	3.8%	0.0%	50.0%
	Female	Count	7	13	19	1	40
		% within Gender of the Respondent	17.5%	32.5%	47.5%	2.5%	100.0%
		% of Total	8.8%	16.3%	23.8%	1.3%	50.0%
Total	Count	21	36	22	1	80	
	% within Gender of the Respondent	26.3%	45.0%	27.5%	1.3%	100.0%	
	% of Total	26.3%	45.0%	27.5%	1.3%	100.0%	

The above table shows the LBP disability range of the respondents. The significant difference in LBP score shows

that the problem of LBP is severe among female when compared to the male respondents.

Table 4: Chi-Square Tests results of LBP disability

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.747 ^a	3	.000
Likelihood Ratio	19.552	3	.000
Linear-by-Linear Association	13.163	1	.000
N of Valid Cases	80		

a. 2 cells (25.0%) have expected count less than 5. The minimum expected count is .50.

Chi square test results indicate that, there is significant difference between disability range between male and female. As per result, female teachers are more prone to LBP compared to male teachers.

Factors determining LBP

Table 5: Paired Sample Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Average Time spend for chores - Have you ever had LBP	.10000	1.51449	.16932	-.23703	.43703	.591	79	.556
Pair 2	Time spend on TV Comp Mobile - Have you ever had LBP	-.91250	1.34253	.15010	1.21126	-.61374	-6.079	79	.000
Pair 3	Do you exercise regularly - Have you ever had LBP	-.35000	1.27389	.14242	-.63349	-.06651	-2.457	79	.016
Pair 4	Practice healthy Body Posture - Have you ever had LBP	-.33750	1.10171	.12317	-.58267	-.09233	-2.740	79	.008
Pair 5	How many hours you sleep daily - Have you ever had LBP	-.21250	1.47291	.16468	-.54028	.11528	-1.290	79	.201

Given table indicated the factors influencing the low back pain of the respondents. There are 5 variables are selected for the paired T-test. They are household chores, duration for TV/Mobile/Computer, Habit of exercise, Practice of body postures and duration of sleep every day. The obtained results interpret that the habit of exercise, practice healthy postures and time spend for TV/Mobile/Computer is the significant factors. But duration of sleep and household work do not influence the LBP.

1. 6 Findings

The analysis results show that, prevalence of Low Back Pain among the non-exercise teachers is higher than the people who do regular exercises. The time spends for TV/Mobile/Computer has significant relation in mechanical Low Back Pain. The respondents who practice healthy body postures are less prone to LBP. So we can say that, the person with regular exercises, less usage of mobile phones and persons who practice healthy body postures can live a pain free and healthy life.

1. 7 Discussions

Low Back Pain is a common health issue in all the human beings. Sedentary lifestyles, unhealthy postures, over usage of mobile phones are leads to Lower Back Pain. Sitting for long time in the chair is inevitable for the clerks; prolonged standing cannot be avoided for teachers. Uncomfortable furniture, Work Overload, Lack of exercise..etc are common causes of the pain. Job structure or nature of these workers cannot be changed but definitely they need an ultimate solution for this pain. According to human nature we do not consult a doctor whenever the illness becomes severe. During the survey the teachers shared their pain experience with the investigator. Majority of the women workers do not spend time for exercises and physical activities compared to the men.

1. 8 Suggestions

Mechanical Low back pain is not a specific disease but rather a complaint that may be caused by a large number of

underlying problems of varying level of seriousness. Proper diagnosis and treatment in the right time (acute stage) will help the victim to prevent the severity of the pain. The person, who lives a sedentary life style are more chance to have Low Back Pain. A well maintained diet along with the Physical Activities will give good results in the fitness level as well as in the pain management. This study suggests finding the appropriate strengthening exercises for managing Low Back pain among this group.

1. 9 Conclusions

Practice healthy body postures while sitting, standing and lifting, do regular exercises and reduce the usage of mobile phones and computer will provide not only the pain free life but also an energetic and healthy life. The professionals, who are having the sedentary work nature, should spend at least 5hours for exercises in a week. A moderate level of walking, cycling, yoga or any kind of physical activities will help to live a healthy, energetic and pain free life.

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