# PREVALENCE OF LOW BACK PAIN AMONG VARIOUS GOVERNMENT SUBORDINATE SERVANTS IN PALAKKAD DISTRICT

❒ **Manu Chakravarthy. S\***

## ABSTRACT

The study is to find out the prevalence of Low Back Pain among the subordinate servants of Palakkad district. The sedentary nature of job among workers results so many health issues. Among these issues low back pain is a prominent problem. To study the prevalence of LBP among the various Kerala State subordinate Government servants Palakkad district was chosen. Total 50 Samples were collected from the various Government offices in the Palakkad district which includes 27 male & 23 female workers who aged from 30 to 53. By using various statistical tools the problems of respondents were analyzed. The result of the analysis says that total 40 (80%) workers experienced Lower Back Pain in their life time. Among these sample, 17 were male (62.96%) workers & 23 were female (100%) who experienced LBP. While comparing to male, female are more prone to LBP. Duration of sleep and time spent for the exercises is significantly influencing the Low Back pain. The pain level and intensity of pain among the female workers 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 Duration of exercises done regularly and duration of sleep in controlling the Low Back Pain among the workers.

**Keywords :** LBP, Acute, Sub-Chronic, Chronic, Cervical, Thoracic, Lumbar, Insomnia, Sacrum, Coccyx

## 1:1 INTRODUCTION

Low back pain is the one of the common problem among all the human being. The only difference is the varied causes and intensity of pain level among individual. It affects about 90% of the people at some point in their lives. LBP may be classified by duration as Acute (pain lasting less than six weeks). Sub chronic (6-12 weeks) and Chronic (more than 12 weeks).The condition may be further classified by the underlying causes are either Mechanical or Non mechanical or referred pain. In most episodes of LBP a specific underlying cause is not identified or even looked for, with the pain believed to be due to mechanical problems such as muscle or joint strain .Most occurrences of LBP go away within a few weeks, others take much longer to resolve or lead to more serious conditions.

Low Back Pain rate among the professional of sedentary life style and job nature are comparatively higher than the others. Prolonged duration of sitting in front of the computers and files may leads to stress on the lower back. Majority of the servants 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 Government officers of 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 among the health workers of south India proved that LBP is the mostly affected health issue that reduced their productivity and days of working. 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.

*Assistant Professor - Govt. College Chittur

## 1:2 ANATOMY OF BACK

The Spine is divided in to several section Cervical (7 vertebrae) make up the neck, The Thoracic vertebrae (12 vertebrae) compose the chest sections and have the ribs attached .The Lumbar vertebrae (5 vertebrae) are the remaining which lies below the last thoracic bone under top of the sacrum .The sacral vertebrae is caged within the bones of the pelvic and coccyx represents the terminal vertebrae or vestigial tail. Vertebrae are linked by ligaments, tendons and muscles .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 round spongy pads of cartilage called discs that act like shock absorbers .Degeneration or 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 may leads to severe pain and which required proper treatment and care for long time.

## 1:3 STUDY OBJECTIVES

• To study the prevalence of LBP among respondents in the study area.

• To examine factors determining LBP among the government servants in the study area.

## 1:4 METHODOLOGY AND DATA SOURCE

The study is designed as pre- test random group design to find out prevalence of Low Back Pain in the various subordinate Government servants of the Palakkad district in Kerala. Simple random sampling method (lottery method) was used to select the sample size of 50 which includes 27 males and 23 females from the various Government offices in the Palakkad district. The data was collected through scheduled questionnaire. Pain intensity was measured with the help of Oswestry Low Back Pain Disability level.

## 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 I
### GENDER COMPOSITION

| Gender | Frequency | Percent |
|--------|-----------|---------|
| Male | 27 | 54.0 |
| Female | 23 | 46.0 |
| Total | 50 | 100.0 |

Table 1 shows the gender composition of the sample collected. Of the total 50 respondents, 54 percent are male (27 respondents) and 46 percentage are female (23 respondents).

### TABLE 2
### PREVALENCE OF LBP

| Gender | LBP Score (Binned) | | | | Total |
|--------|-------|--------------|-------|--------|-------|
| | Never | Occasionally | Often | Always | |
| Male | 10 | 16 | 1 | 0 | 27 |
| | 37.0% | 59.3% | 3.7% | 0.0% | 100.0% |
| Female | 0 | 0 | 0 | 10 | 23 |
| | 0.0% | 0.0% | 56.5% | 43.5% | 100.0% |
| Total | 10 | 16 | 14 | 10 | 50 |
| | 20.0% | 32.0% | 28.0% | 20.0% | 100.0% |

The study classifies the frequencies of occurrence of LBP as never, occasionally, often and always. It is clear that of the 50 respondents, 10 male respondents do not suffer any LBP. While in the case of occasionally category 16 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 13 female in often) and only 10 females with no males in the category always. Having seen a gender difference on the basis of pain a chi square was run. Test statistics 46.262 at 1% level of significance (df=3) accepts the alternative hypothesis that there exist a significant difference among male and female.

## TABLE 3
## LBP SCORES OF RESPONDENTS

| Gender | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| Male | 27 | .00 | 22.00 | 10.7037 | 5.09762 |
| Female | 23 | 22.00 | 36.00 | 28.4348 | 4.70808 |

The above table shows the mean and standard deviation of the LBP score of the respondents. The significant difference in mean LBP score (male 10.70 and female 28.43) shows that the problem of LBP is severe among female when compared to the male respondents and a slight variation as seen from the measure of variation.

**FATORS DITERMINING LOW BACK PAIN**

A regression has been fit to see the factors determining the LBP of the respondents.

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + U$$

Where Y = dependent variable (LBP)

X = independent variables ($X_1, X_2, X_3, X_4, X_5, X_6$ are age, Time spend for TV/Mobile, Duration of Household works, Duration of Exercise/Week, Driving distance, Duration of sleep/day)

$\beta$ = rate of change.

U = error term

## TABLE 4
## COEFFICIENTS

| Model | Unstandardized Coefficients | | Standardized Coefficients | | |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | t | Sig. |
| (Constant) | 33.180 | 13.272 | | 2.500 | .016 |
| Age | .294 | .161 | .171 | 1.828 | .074 |
| Time spend for TV/Mobile | -.708 | 1.595 | -.053 | -.444 | .659 |
| Duration of Household works | .402 | 1.219 | .059 | .330 | .743 |
| Duration of Exercise/Week | -2.597 | .968 | -.365 | -2.683 | .010 |
| Driving distance | -.016 | .088 | -.021 | -.180 | .858 |
| Duration of sleep/day | -3.253 | 1.218 | -.431 | -2.670 | .011 |

The obtained results interpret that the duration of exercise, duration of sleep and age are the significant factors. While time spend for TV and household work and driving distance do not influence. The rate of change of the significant factor that is duration of exercise and duration of sleep shows a negative change indicating that greater the duration of exercise and sleep hours lesser will be prone to LBP. Age the significant factor at 10% level of significance shows a positive rate of change inferring that as age increases there are chances for LBP.

**TABLE -5**
**MODEL SUMMARY**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|-----|----------|-------------------|----------------------------|
| 1 | .822[a] | .676 | .631 | 6.17773 |

The obtained R square value validates the fitted regression model and infers that the factors of the model explain 67.7 percent of the variations in the dependent variable.

## 1:6 FINDINGS

The analysis results show that, prevalence of Low Back Pain among the non-exercise servants is higher than the people who do regular exercises. The effect of exercises and sound sleep on managing LBP is significantly higher than the other selected variables. So we can say that, the person with regular exercises and sound sleep can live a pain free and healthy life.

## 1:7 DISCUSSIONS

Low Back Pain is a common ailment in all the human beings. Sedentary lifestyle is the one of the major reason for the Lower Back Pain. Sitting for long time in the chair is inevitable for the clerks & Computer operators. Uncomfortable furniture, Work Overload, Insomnia, 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 employees 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

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. Treatment in the right time (acute stage) will help the patient to avoid worsening condition. 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

Exercise habit and sound sleep contribute 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 5 hours 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.

**References :**

*Books*

- Burch, V. (2010). *Living well with pain and illness: The mindful way to free yourself from suffering.* Sounds True.

- Dagenais, S., & Haldeman, S. (2011). *Evidence-Based Management of Low Back Pain-E-Book.* Elsevier Health Sciences.

- Field, A. (2013). *Discovering statistics using IBM SPSS statistics.* Sage

- Gutierrez, M. A., & Gutierrez, M. (2005). *Understanding Low Back Pain: Breakthroughs and New Advances in the Diagnosis and Treatment of Low Back Pain*.iUniverse.

- Jonsson, E., & Nachemson, A. L. (2000). *Neck and back pain: the scientific evidence of causes, diagnosis, and treatment*. Lippincott Williams & Wilkins.

- McGill, S. M. (2015). *Low back disorders: evidence-based prevention and rehabilitation*. Human Kinetics.

- Porterfield, J. A. (1998). *Mechanical low back pain: perspectives in functional anatomy*. WB Saunders company.

**Journals**

- Arendt-Nielsen, L., Morlion, B., Perrot, S., Dahan, A., Dickenson, A., Kress, H. G., & Mohr Drewes, A. (2018). Assessment and manifestation of central sensitisation across different chronic pain conditions. *European Journal of Pain*, *22*(2), 216-241.

- Diraco, G., Leone, A., & Siciliano, P. (2010, March). An active vision system for fall detection and posture recognition in elderly healthcare. In *2010 Design, Automation & Test in Europe Conference & Exhibition (DATE 2010)* (pp. 1536-1541). IEEE

- Hazard, R. G., Haugh, L. D., Reid, S., McFarlane, G., & MacDonald, L. (1997). Early physician notification of patient disability risk and clinical guidelines after low back injury: a randomized, controlled trial. *Spine*, *22*(24), 2951-2958

- Mannion, A. F., Weber, B. R., Dvorak, J., Grob, D., & Müntener, M. (1997). Fibre type characteristics of the lumbar paraspinal muscles in normal healthy subjects and in patients with low back pain. *Journal of orthopaedic research*, *15*(6), 881-887.

❑ ❑ ❑