

Prevalence of Low Back Pain and Associated Risk Factors among School Teachers of Lahore

Sidra Saleem¹, Sana Tauqeer², Hammad Shakeel³, Naveed Anwar^{4*} and Kehkshan Khalid⁵

¹Riphah International University, Lahore, Pakistan

²Consultant Physiotherapist, Riphah International University, Lahore, Pakistan

³Physiotherapist, University Institute of Physical Therapy, Lahore, Pakistan

⁴Assistant Professor, Riphah International University, Lahore, Pakistan

⁵Lecturer, Riphah International University, Lahore, Pakistan

***Corresponding Author:** Naveed Anwar, Assistant Professor, Riphah International University, Lahore, Pakistan.

Received: June 21, 2020; **Published:** August 29, 2020

Abstract

Aim: To find out prevalence of low back pain among teachers of Lahore, Pakistan.

Methodology: This cross-sectional survey was conducted from April-September 2017 on 120 teachers working in different government and private schools of Lahore, Pakistan. Participants with any accident, fracture and tumor were excluded. Japanese Orthopedic Association Back Pain Evaluation Questionnaire was used. The teachers were interviewed and asked to fill in the questionnaires. Statistical Analysis was done by using SPSS version 21.

Results: Total 120 subjects were included in the study with 75 (45, 83%) females and 45 (16.67%) males. Mean age of respondents was. \pm SD 31.04 \pm 7.766 the prevalence of low back pain in teachers, more prevalent in females as compared to males. Study revealed that 61 (70.9%) lied down more often than usual, 55 (64.0%) refrained from bending, 51 (59.3%) faced difficulty in putting on socks, 49 (57.0%) faced difficulty in standing from chair, 46 (53.5%) went up the stairs slowly, 45 (52.3%) could not sleep, 45 (52.3%) asked help from others and 45 (52.3%) walked only short distances.

Conclusion: The prevalence of low back pain is high among teachers. It was found that due to low back pain, teachers were not able to do daily life activities.

Keywords: Low Back Pain; Posture Musculoskeletal Pain; Prevalence

Introduction

Low back pain (LBP) is the most biggest and major musculoskeletal (MSKD) problem that influence a crowd of people all over the world irrespective of male, female, young and older it affect people of all age. Pain is the most major manifestation which people usually grumble the musculoskeletal disorder is of one the commonest cause of pain world-while [1,2] the site of musculoskeletal disorder which may include any injury or problem related to the upper limb is usually located from fingers to shoulders and neck and the other site is lower limb located from hip to toes. The commonest musculoskeletal pains are back pain and cervical spondylitis. But the low back pain ratio is greater than cervical pain [3]. Musculoskeletal disorders (MSKDs) can agitate the body muscles, joints, tendons, ligaments and

nerves [4]. The lower back consists of the lumbar spine. The lumbar spine is a group of five vertebrae all these five vertebrae join with each other through intervertebral disc to make up the vertebral column in the lower back. The upper most L1 vertebrae of the lumbar spine makes a joint with a thoracic vertebrae T12 of the thoracic spine at the level thoracolumbar junction whereas the last lumbar vertebra L5 makes a joint with the first sacral vertebra S1 at the lumbosacral junction. The lumbar vertebrae are the largest part of the spine and the lumbar spine is the major weight-bearing part being highly and the most mobile vertebrae in the human body [5].

Low back pain may be because of some postural imbalances it may be owned to prolong standing or prolong sitting position or due to sedentary lifestyle. Low back pain normally influences the people who worked overtime. However, many recent researches indicate that teachers are at higher risk in developing musculoskeletal disorders comparatively any other profession. Although it is not constant but the previous investigation and studies shows that the low back pain is ranged from 23 to 95% [6-8]. The work of teachers does not only involve teaching students but it also include establishing a new lessons, assignment, assessing students' work, and participating in different school committees, meeting and seminars, making some creativity work and doing art work for students this frantic routine of teachers causes a noticeable increase in mental and physical issues [9]. The etiology of musculoskeletal pain (MSP) is now generally accepted to be caused by multiple factors that are affecting a person in which there may be some physical, psychological and social factors are included. Age, sex, physical strenuous activities and those activities including heavy lifting load or doing work with bad or improper position all these conditions can highly increases the risk of musculoskeletal back pain [10].

According to the Ghorbanali Mohammadi., *et al.* the purpose of the study was to evaluate the prevalence of low back pain among Iranian schoolteachers in the developed and industrially developing countries musculoskeletal disorder is the serious cause of disability and occupational injuries by using questionnaires. A survey was held among 231 high school teachers this survey was conducted four times during a period of 2 years. According to the research the MSKD depend on frequency, duration and signs of pain. In the survey of last 12 months it was observed that interference in work due to symptoms of pain was 35% in male and 15% in female. Major work-related impairments or interference in daily routine activities are due to low back pain (male = 69%, female = 77%), which is equivalent to neck pain. In the next survey of last 24 months there was a sick leave of 35% male and 15% female due to MSD. However, this study shows that the musculoskeletal issues becomes leading problem in performing normal activities MSD does not permit teachers to meet their job demands its becomes the major restricting factor while performing their duty [11]. The rationale of the study was to determine the prevalence of low back pain among school and their level of disability due to low back pain.

Materials and Methods

In this cross-sectional study 120 teachers were conveniently included in the study during the time period of April 2017 to September 2017. Teachers between age group of 21 to 59 were selected and interviewed in this study because mostly teachers are from in age group. Questionnaires were distributed among teachers. Total 200 questionnaires were distributed among which 120 were given by hand and rest were sent through email 80 questionnaires were eliminated as they were not according to the including criteria (subjects between 21 - 59 years). Prevalence of low back pain and problems in daily life activities due to low back pain were recorded using Japanese Orthopedic Association Back Pain Evaluation 14 Questionnaire. Sample size of this study was 120 that were calculated by using Epi tools sample size calculator software. Formula used for this purpose was $n = 22 (Z^2 P (1/P)) / e$. Where Z = value from standard normal distribution corresponding to desired confidence level (Z = 1.96 for 95% CI), P is expected true proportion; e is desired precision (half desired CI width). Data was collected from teachers working in different school, colleges and universities of Lahore, Pakistan. Study was completed within 6 months after the approval of synopsis. Teachers who were working in Government and private sectors were included i.e. university of Lahore, government schools native school system, allied school system and central group of colleges. Participants with any recent accident, lumbar spine fracture, tumor and surgery were also excluded. The variables were defined using descriptive statistics including frequency and bar charts. Japanese Orthopedic Association Back Pain Evaluation Questionnaire was used in this study. The consent forms were signed from all the teachers before giving them questionnaire. Statistical Analysis was done by using SPSS version 21.

Ethical approval

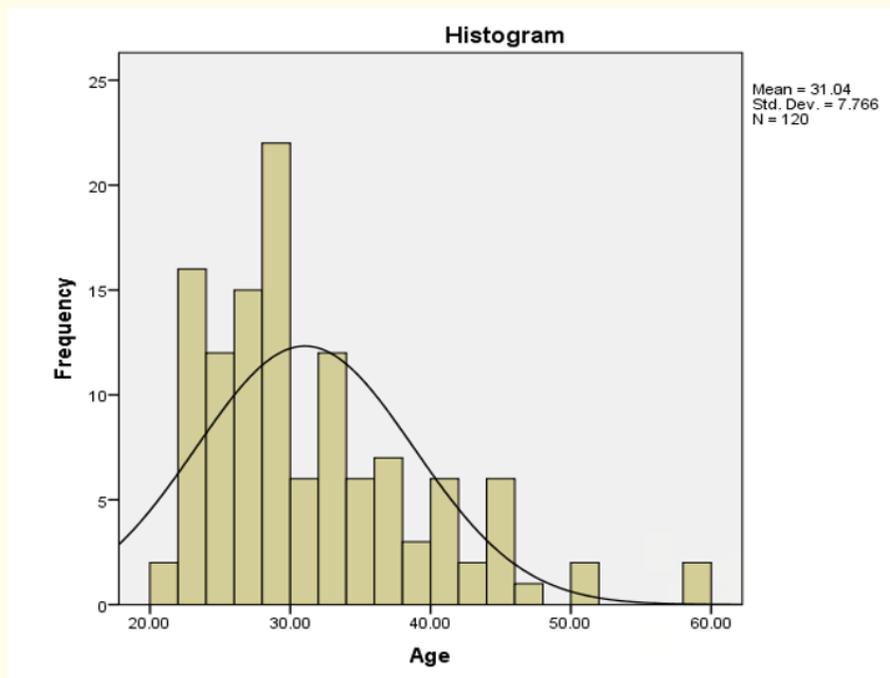
The study did not involve invasive procedures, or personal identifying data. The women were interviewed only for getting information on their baseline characteristics. Therefore, it was not necessary to seek formal external ethical approval. Written consent form was given to participating teachers.

Results

Age of teachers

Statistics		
Age		
N	Valid	120
	Missing	0
Mean		31.0417
Std. Deviation		7.76590
Minimum		21.00
Maximum		59.00
Mean ± SD		31.04 ± 7.765

Table 1



Graph 1: Distribution of Age by histogram.

A frequency of an age was estimated the minimum age of an individual was 21 and the maximum age was 59 (Table 2). A histogram was used to show the frequency of age mean \pm standard deviation $31.04 \pm .7.766$.

Gender* because of low back pain, you cannot sleep well (if you take sleeping pills because of pain select “No”)

Count					
Yes		Because of low back pain, you cannot sleep well (if you take sleeping pills because of pain select “No”)			Total
		No			
Gender	Male	11	34		45
	Female	31	44		75
Total		42	78		120

Table 2: Cross-tabulation of sleep between male and female.

11 male and 31 female unable to take a good sleep due to back pain and 34 male 44 female take a good sleep.

Gender* because of low back pain, you have difficulty in any one of the following motions, bending forward, kneeling down or stooping

Count					
I have great difficulty		Because of low back pain, you have difficulty in any one of the following motions, bending forward, kneeling down or stooping			Total
		I have some difficulty		I have no difficulty	
Gender	Male	2	16	27	45
	Female	8	38	29	75
Total		10	54	56	120

Table 3: Cross-tabulation of motion, bending, kneeling between male and female.

2 male 8 female find a great difficulty in bending forward, kneeling down and stooping 16 male 38 female have some difficulty and 27 male 29 female have no difficulty.

Crosstab

Count						
Yes		Because of low back pain, you refrain from bending forward or kneeling down?			Total	P value
		No				
Do you have back pain?	Yes	42	33	75	.000	
	No	0	45	45		
Total		42	78	120		

Table 3a: Do you have back pain? *Because of low back pain, you refrain from bending forward or kneeling down? Cross tabulation.

In an association between low back pain and refraining from bending forward and kneeling down from the total population 42 female out of 75 and said yes they refrain whereas 45 male out of 45 said they don't refrain from bending forward and kneeling down

Do you have back pain? *Because of low back pain, you go up the stairs more slowly than usual?

Crosstab					
Count					
Yes		Because of low back pain, you go up the stairs more slowly than usual?		Total	P value
		No			
Do you have back pain?	Yes	42	33	75	.000
	No	0	45	45	
Total		42	78	120	
P value.000					

Table 4

In an association between low back pain and going up stair slowly than usual 45 female said yes they have difficulty 33 female and 45 male said they have no difficulty in going up stairs.

Discussion

It is actually believed that the low back pain is the higher musculoskeletal pain and is normally seen in female teachers with higher percentage and the most frequent part in human body which is very much susceptible to pain [3]. According to this cross sectional study that was conducted to find out the level of disability among teachers due to low back pain this study indicates that low back pain is very typical among female teachers than male. It is usually associated with physical factors like bad posture or prolong standing or prolong sitting position low back pain depend on opportunities provided to the teachers in their institute or on their socio-economic status or their working routine and psychosocial domain in schools [2].

In this study teachers also complain of functional limitation due to back pain as most of the teachers have problem in going up stairs they complain of not having good sleep most of the time due to back problem or facing problem in bending or kneeling down.

Some of the studies study conclude that the high percentage of low back pain and its associated risk factors were seen among primary and secondary school, and higher academic institute teachers in Gondar town. This study shows 57.5% of LBP pain in teachers though out their job career and some teachers have pain from last 12 months they have a prevalence of 53.8% [12].

According to this study low back pain is also most common among primary and secondary, higher school and university teachers specially in female as compare to male.

Conclusion

This study concluded that prevalence of LBP among teachers of Lahore Pakistan was high and LBP was more common in females than males.

Recommendations

A further study should conduct using large sample size from different areas of Pakistan. Further researches are needed to propose an ideal sitting posture in future so that posture can decrease low back pain.

Limitations of the Study

This study is limited to Lahore city of Pakistan. We only found the prevalence among teachers more researches are needed to investigate the strength of the muscle or level of weakness of muscles of low back.

Bibliography

1. Akkoc Nurullah. "Are Spondyloarthropathies as Common as Rheumatoid Arthritis Worldwide? A Review". *Current Rheumatology Reports* 10.5 (2008): 371-378.
2. Tsuboi Hirohito., *et al.* "Psychosocial Factors Related to Low Back Pain among School Personnel in Nagoya, Japan". *Industrial Health* 40.3 (2002): 266-271.
3. Darwish Magdy A and Shatha Z Al-Zuhair. "Musculoskeletal Pain Disorders among Secondary School Saudi Female Teachers". *Pain Research and Treatment* (2013).
4. Schneider E and X Irastorza. "Work-Related Musculoskeletal Disorders in the Eu". European Agency for Safety and Health at Work, Luxembourg: Publications Office of the European Union (2010).
5. Panjabi Manohar M., *et al.* "Human Lumbar Vertebrae: Quantitative Three-Dimensional Anatomy". *Spine* 17.3 (1992): 299-306.
6. Kohlmann T. "Muskuloskelettale Schmerzen in Der Bevölkerung". *Der Schmerz* 17.6 (2003): 405-411.
7. Cardoso Jefferson Paixão., *et al.* "Prevalence of Musculoskeletal Pain among Teachers". *Revista Brasileira de Epidemiologia* 12.4 (2009): 604-614.
8. Kovess-Masféty Viviane., *et al.* "Do Teachers Have More Health Problems? Results from a French Cross-Sectional Survey". *BMC Public Health* 6.1 (2006): 101.
9. Chong Elaine YL and Alan HS Chan. "Subjective Health Complaints of Teachers from Primary and Secondary Schools in Hong Kong". *International Journal of Occupational Safety and Ergonomics* 16.1 (2010): 23-39.
10. Miranda H., *et al.* "A Prospective Study on Knee Pain and Its Risk Factors". *Osteoarthritis and Cartilage* 10.8 (2002): 623-630.
11. Mohammadi Ghorbanali. "Musculoskeletal Complaints among High School Teachers". *Journal of Musculoskeletal Research* 16.02 (2013): 1350010.
12. Mengestu Mezgebu Yitayal and Yifokire Tefera Zele. "Low Back Pain and Associated Factors among Teachers in Gondar Town, North Gondar, Amhara Region, Ethiopia". *Occupational Medicine and Health Affairs* (2013).

Volume 11 Issue 9 September 2020

©All rights reserved by Naveed Anwar., et al.