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PREVALENCE & RISK FACTORS OF LOW BACK PAIN AMONG TEACHING STAFF AT KSU RIYADH, CROSS SECTIONAL STUDY.

[1]Dr Sajjan Iqbal Memon, [2]Dr Sawera Rasheed [3]Dr Sultana Sindhu, [4]Dr Payal, [5]Dr Faiza Qureshi, [6]Claire Mic Gillycuddy Smith, [7]Dr Shunaid Ahmad Memon.

[1]Department of Health Administration, king Saud University, Riyadh, Saudi Arabia, sajjan.memon@yahoo.com
[2]Institute of Physiotherapy & Rehabilitation Sciences LUMHS Jamshoro Pakistan, sairy.gunnam@gmail.com.
[3]Institute of Physiotherapy & Rehabilitation Sciences LUMHS Jamshoro Pakistan, dsindhu909@gmail.com.
[4]Institute of Physiotherapy & Rehabilitation Sciences LUMHS Jamshoro Pakistan, payalrani2909@hotmail.com
[5]Department of Rehabilitation medicine & Physiotherapy, Shandong University, China,faizaazeemi55@gmail.com.
[6]Leeds and Guisely Physiotherapy Clinic, Bradford, United Kingdom, Clairphysioyoga@hotmail.com.
[7]Medical Officer, Civil Hospital Thatta, Sindh Pakistan, shunaid.ahmad@gmail.com

Abstract:

Objectives: To examine prevalence and identify risk factors and coping strategies of low back pain. Main study Objectives focused on Full- time permanent teaching faculty members of King Saud University Medical College at Riyadh. Delivering lecturers between <3 and > 3 working hours a day. In addition, having age limit between < 40 and >40 years old done through modified Oswestry pain questionnaires.

Methodology: A descriptive cross-sectional study with self-administrative questionnaires design was used to collect information from 161 respondents over the period of 6 months (January to June2019)

Results: Prevalence of LBP was considerably higher due to majority of response rate by male respondents about 63% and 37% by females. (Descriptive Statistics Mean Results for variables like Sex was 1.2919 Age: 1.2981 and Working Hours: 1.8012) whereas, (SD for Sex .45607, age: .45887 and working hours: .40031) was recorded. Chi-Square Test was used to show relation between three independent variables for (age, sex and total working hours of faculty members).statistics result of Chi-Square in sex was value of 27.882a and age value of 26.242a and total working hours was 58.441a, degree of freedom in the data was set to 1. Whereas, total Prevalence score was recorded 2249 in scale.

Conclusion: It has been concluded that, low back pain is a common complaint during walking. Prevalence stands out to be 63% in male population and teachers do experience recurrent low back pain which consequently leads to chronic disability having various postural problems of the body in context by lifting heavy physical load

KEYWORDS: Low Back, Pain, Musculoskeletal Disorders, Disability, Postural Problems.

Corresponding author:

Dr. Sajjan Iqbal Memon,
Department of Health Administration,
King Saud University, Riyadh, Saudi Arabia,
sajjan.memon@yahoo.com

QR code

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INTRODUCTION:

Low back pain (LBP) is defined as discomfort in the spinal area (between the lower costal margin and gluteal folds) with or without radiation into the leg to below the knee for at least one day during the preceding over 12months (Karahan A et al., 2009**).** Teachers are subjected to muscular strains & stresses in course of their work, as they suffer from low back pain, however introducing preventive programs and having education about causes can be beneficial (Omokhodion FO et al., 2000**)**. Low back pain may be a manifestation of distress and commonly occur with unexplained pain symptoms (Watson KD, et al., 2003). It has been recognized that low back pain is a common phenomenon that affects public health (Jones MA, et al., 2004**).** Conditions causing LBP includes, facet joint arthritis or disc pressure on the annulus fibrosis, vertebral end plate or nerve root impingement and. LBP is highly associated with biomechanical risk factors leading to (prolonged standing, sitting, including bending, and twisting). Among 37% cases of LBP are attributed to occupation, whereas in Europe about 30% of the general working population suffers globally (Spyropoulos P. et al 2007**).** Teaching profession is carried out under unfavorable circumstances pertaining to mobilize their physical, cognitive, and affective capacity to reach production objectives, over demanding on generating over effort due to psycho physiological functions consequently effecting physical & mental health and having impact on professional performance (Cardoso JP, et al 2009). A study in Ireland showed one of the leading causes of ill health retirement among teachers was musculoskeletal problems, including LBP which was responsible for about 10 percent of the ill health retirement in the population. (Nurul I, et al 2010**).** An Occupational low back injury also leads to long-term pain and disability, resulting insubstantial medical expenses as well as the loss of remuneration for work (Sikiru L, et al, 2010). Population with chronic LBP experience huge social, mental, physical and occupational disruptions, mental impact of low back pain includes anxiety, depression and sleeplessness, resulting from inability to carry out social activities and it decreases the capability to perform occupational activities in adults of working age **(**Adebusoye LA et al, 2013) **.** A study suggested that low back pain represent a significant portion of morbidity in working population data from a national insurer indicating the claims about 16% of all worker's compensation claims and 33% of total claims, and relationship of the complex disorders with the individuals may experience impairment or disability because of directly relating occupational factors (Beyen TK, et al, 2013). Majority cases of LBP may periodically remit and recur, but Potential causes of mechanical low back pain are numerous and include muscle spasm, muscle strain, disco genic pain, Z-joint pain, sacroiliac joint pain, and spondylosis. When low back pain lasts longer than 3months, it is termed chronic low back pain which is less likely to spontaneously resolves (Erick PN, et al 2014). Evidence also suggests that low back pain can occur due to minimum workplace support and low job satisfaction, therefore, it is a global health issue resulting in chronic pain, functional impairment, frequent sick leaves and absence from work. Consequently, this equates with high economic- related implications burdened by less working hours, early retirements, less work force and reduced productivity (Bandpei MA, et al, 2014**).** The risk factors of LBP have been identified including, (i) individual factors such as body weight and age, (ii) Biomechanical factors as heavy physical load, lifting, twisted posture and vibration and (iii) Psychosocial factors as job control and satisfaction etc. But different working conditions and demands for example, (teaching, assessing students' homework, examination, and working on computers) that requires prolonged sitting or standing. May be considered as a risk factor for Work related Musculoskeletal disorders. Notwithstanding in the past, several epidemiological studies have demonstrated that factors such as: gender, age, length of employment and awkward posture are mainly associated with higher LBP risk factors and prevalence rates **(**Abdulmonem A, et al 2014). Thus, the purpose of our study is to investigate the prevalence and risk factors for LBP in teachers and to evaluate the association of occupational characteristics. In this regard there are only few epidemiological studies done in teaching faculty members particularly in a city of Riyadh Saudi Arabia. Aim for this study is to compare variation in results with other studies for low back Pain.

MATERIALS ANDMETHODS:

Study design:
Cross sectional Semi-structured Questionnaires based.

Setting: Data was collected from King Saud University medial collage Riyadh

Sampling technique:
Purposive Non-Random Sampling technique.

Duration of study:
6 Months (2019)

Sample design:
Convenience
sampling.
Sample size: A sample size of 200 in teaching faculty members.

SAMPLE SELECTION CRITERIA:

Inclusion criteria

Full- time permanent teaching faculty members of King Saud University Medical College Riyadh.
Faculty members delivery lecturers between <3 and > 3 working hours a day.
Age between < 40 and >40 years old.

Exclusion criteria:
All part time faculty members, who were not delivering lectures at least 3 days a week.
All other person not fulfilling in above mentioned criteria were excluded. Participants were excluded if they had any specific medical condition affecting the cervical spine (such as ankylosing spondylitis, tumors, infection, and rheumatoid arthritis).

Statistical Analysis:
Data was analyzed through SPSS version 17 and Microsoft Excel 2016. Descriptive statistics frequency, percentage and Chi-square test is used.

Ethical consideration: This study was approved by Committee, Under the supervision of Dr Rashid Alhamali at the department of Health Administration, Collage of Business Administration King Saud University Riyadh Saudi Arabia under the regulation of ethical consideration. Respondents received written information explaining purpose of the study and were invited to take part on voluntary basis. Respondent confidentiality was protected during whole study.

Conflicts of Interests:
The authors have no conflicts of interest relevant to this study.

Budget: 500 Saudi Riyals.

STUDY Limitations:
lack of statistical expertise and shortage of time were the main obstacles while conducting this study and having small sample size was not enough to accommodate majority of the respondent's demographics.

RESULTS:

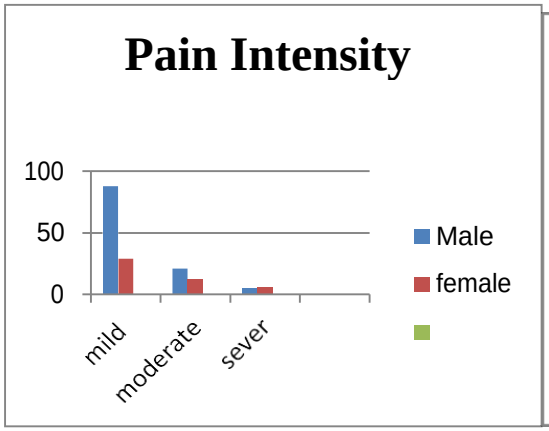
As illustrated in (**Tabular variable Chart 1**) Pain Intensity reported cases of both genders by 88 (77%) in mild, while moderate were 21 (18%) and severe showed 5 (04%) in total. Similarly, in female category 29 (61%) depicts mild case. However, moderate reported 12 (25%) and remaining 6 (12%) were severe (**figure 1**). In Personal care 24 (21%) males suffered from LBP. While, remaining 18 (38%) was found in the females. The lifting activities in males counted about 80 (70%) mild, moreover moderate showed 15 (13%). Whereby 19 (16%) were severe. On other hand, the female category, 35 (74%) were particularly mild. Furthermore, moderate cases were about 03 (06%) and lastly 09 (19%) reported as severe (**figure 3**). During Walking affected males were about 104 (91%) in mild. In addition, 09 (07%) males were illustrated moderately while the remaining 1 (0.8%) fall for severe category. Nevertheless, females represented about 41 (87%) mild and 6 (12%) moderate pain and remaining in severe there was zero (**figure 2**). During Sitting activity 13 (11%) males were affected. However, in females 11 (23%) were categorized. In Standing affected males showed 20 (17%) whereas females were 08 (17%) affected. During Sleeping 04 (3%) males were suffered. While 06 (12%) occurred in females. The Social Life Category for males accounted about 05 (04%) suffered from LBP and remaining 9 (19%) was indicated in females. Travelling consisted 13 (11%) occurred in males, and 10 (21%) were in females (**figure 4**). In Employment/Homemaking 12 (10%) males suffered from work, employment and remaining 05 (10%) were females. Perhaps, majority of women did not show much interest to participate in this survey, whereas male showed positive results in average. Therefore, related data results were in the favor for males.

TABLE 1:
Tabulated Chart Variables:

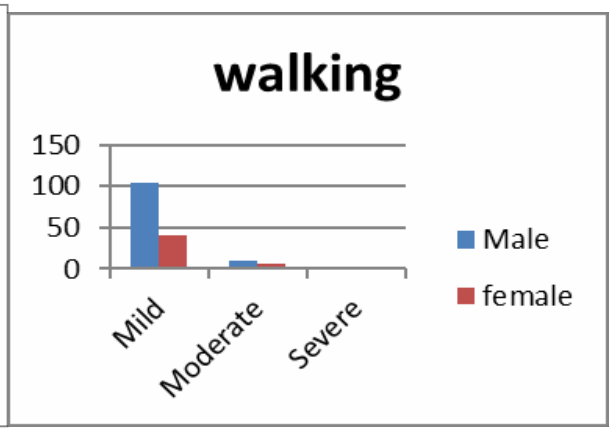
A)	Personal Care	Male	Female	Total
1	Yes	24	18	42
2	No Pain	90	29	119
B)	**Sitting**	**Male**	**Female**	**Total**
1	Yes	13	11	24
2	No Pain	101	36	137
C)	**Standing**	**Male**	**Female**	**Total**
1	Yes	20	08	28
2	No Pain	94	39	133
D)	**Sleeping**	**Male**	**Female**	**Total**
1	Yes	04	06	10
2	No Pain	110	41	151
E)	**Social life**	**Male**	**Female**	**Total**
1	Yes	05	09	14
2	No Pain	109	38	147
F)	**Employment**	**Male**	**Females**	**Total**
1	Yes	12	05	17
2	No Pain	102	42	144
SN#	**Gender**	**SCORE**	**TOTAL**	**PREVALENCE (PERCENTAGE)** %
1	**MALES**	**1409**	**2249**	**63%**
2	**FEMALES**	**840**	**17484**	**37%**

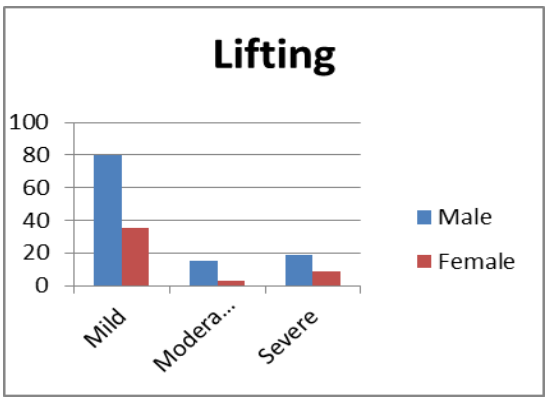
Figures:

1)



2)





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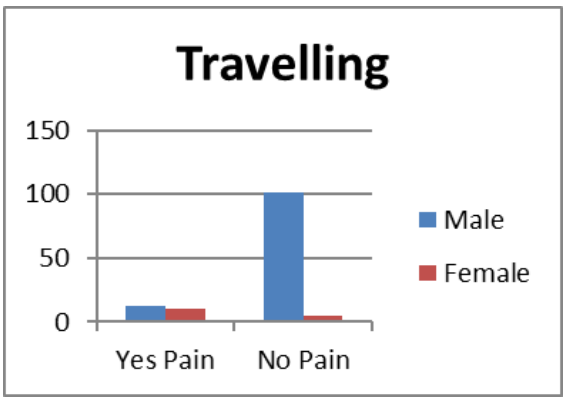

4)

Descriptive Statistics:

The Descriptive qualitative data has been categorized into three independent variables namely; Sex, Age of faculty members having less than 40 years and greater than 40 years old, and secondly working hours were also consisted of less than 3 hours and greater than 3 hours. (These are also mentioned in the Inclusion Criteria). However, mean for sex of including 161 populations was 1.2919. Age = 1.2981 and working hours having 1.8012. whereas SD for sex of both males and females stood at .45607, In terms of Age it showed .45887 and working hours having .40031 respectively.

CHART 2

Descript ive Statistics	N	Mini mum	Maxi mum	Mean	Std. Deviation n
Sex	161	1.00	2.00	1.291 9	.45607
Age	161	1.00	2.00	1.298 1	.45887
Working Hours	161	1.00	2.00	1.801 2	.40031
Valid N (list wise)	161				

Chart: 3

Frequencies

Frequencies		Sex	Age	Working hours
N	Valid	161	161	161
	Missing	0	0	0

Chart 4: DEMOGRAPHICS
SEX

	Frequenc y	Percent	Valid Percent	Cumulative Percent
MALE	114	70.8	70.8	70.8
FEMAE	47	29.2	29.2	100.0
Total	161	100.0	100.0	

AGE

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MALE	113	70.2	70.2	70.2
	FEMALE	48	29.8	29.8	100.0
	Total	161	100.0	100.0	

Working Hours

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	MALE	32	19.9	19.9	19.9
	FEMALE	129	80.1	80.1	100.0

Chi-Square Test: A Non-parameter Test Chi-Square has been used to show relation between three independent variables of age, sex and total working hours of faculty members, while exaction was selected to asymptomatic option and confidence interval was set to 99% with number of samples to 10000, while analyzing the data. In addition, Test Statistics result of Chi-Square in sex was the value of 27.882a and age value of 26.242a and total working hours was58.441a, degree of freedom in the data were set to1.

Chart 5
Chi-Square frequencies

A) Sex			
	Observed N	Expected N	Residual
Male	114	80.5	33.5
Female	47	80.5	-33.5
Total	161		
B) Age			
	Observed N	Expected N	Residual
Male	113	80.5	32.5
Female	48	80.5	-32.5
Total	161		

C) Working Hours

	Observed N	Expected N	Residual
Male	32	80.5	-48.5
Female			
Total	129	80.5	48.5
	161		

Test Statistics

	Sex	Age	Working hours
Chi-Square	27.882[a]	26.242[a]	58.441[a]
Df	1	1	1
Asymp. Sig.	.000	.000	.000

a. 0 cells (.0%) have expected frequencies less than 5. The minimum expected cell frequency is 80.5.

DISCUSSION:

In this study, a Modified Oswestry low back pain questionnaire was used to calculate functional disability evaluation. Questionnaires were based on demographic data consisting of 10 main sections of working condition disabilities having (pain intensity, personal care, and lifting, walking, sitting, standing, sleeping, social life, traveling and employment\homework activities). Questionnaires were pretested and modified by help of an expert to fulfill goals of this survey. The Questionnaires were used for the purpose of data collection from all the participants through informed consent implied by voluntarily completing and returning the questionnaires for further data analysis. Among total sample size of 200 participants, about 161 gave positive response, while remaining individuals showed less interest in the study.

In this survey, data were collected by majority of males as compared with females; because of the occurrence of higher majority of male faculty members gave a positive response by filling questionnaires for LBP. While, female faculty members were lacking in terms of majority. Moreover, sample size of 200 of total demographic populations. 161 questionnaires were obtained due to lack of interest in showing positive response from faculty members and male participants consisted of 114 in total that were answered. Data for female consisted of 47 participants in total. That's the reason why, our data collection survey reflects the majority in male faculty members who suffered from low back pain. The time period of data collection was from January to June 2019 (6months). The total Prevalence score in this study was found to be **2249** overall. The Prevalence was higher amongst men as compared with females. In a review by Punnett, the attributes factor for LBP was also higher amongst men (63%) as compared than Women was about (37%). The main reason is that, Males usually tend to engage themselves in occupations associated with heavy physical workload than women. Physical efforts such as manual exertion & exposure to whole body vibration are the common physical ergonomics related to low back pain. This is comparable to the findings of study that associated LBP with heavy physical work, bending, poor posture & prolonged sitting or standing. In addition, increased LBP is mainly due to slouched sitting forward bending and lifting. Moreover, being overweight also causes an increase in the pressure on the structures of the lower back and they may lead to lumber disc herniation and subsequent low back pain. Chronic medical illness such as hypertension, diabetes mellitus and obesity with advancing age have been reported to influence the occurrence of tendon and ligament disease which can lead to LBP. In order to reduce the brunt of LBP the provision of good chairs is ideal. Treatment for back pain remains unsatisfactory but Some of the respondents with back pain in this study took rest to relieve their symptoms. The adoption in poor postures by teachers has been influenced mainly by environment and inappropriate working conditions contributing to LBP. Teachers' having flexed posture is also an important factor associated with LBP. The lack in workstation height in chairs & tables may subsequently leads teachers to develop

posture prone to LBP. As we know, In proper Ergonomics support of the chairs lead the teachers make sit without back support, with excessive flexion of the knees and hips (in the case of lower chairs), & flexion of the trunk to write and read texts on the table & without support for upper limbs.

CONCLUSION:

Having concluded that, Prevalence for low back in adult working-class group is very common in high income countries. Ergonomics education on posture and correct lifting techniques should be introduced in the workplace to reduce its burden.

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REFERENCES:

1. Karahan A, Kav S, Abbasoglu A, Dogan N. Low back pain: prevalence and associated risk factors among hospital staff. Journal of advanced nursing. 2009Mar;65(3):516-24.
2. Omokhodion FO, Umar US, Ogunnowo BE. Prevalence of low back pain among staff in a rural hospital in Nigeria. Occupational Medicine. 2000 Feb1;50(2):107-10.
3. Watson, K. D., Papageorgiou, A. C., Jones, G. T., Taylor, S., Symmons, D. P. M,Silman, A. J., & MacFarlane, G. J. (2003). Low back pain in schoolchildren: the role of mechanical and psychosocial factors. Archives of disease in childhood, 88(1), 12-17
4. Jones MA, Stratton G, Reilly T, Unnithan VB. A school-based survey of recurrent non-specific low-back pain prevalence and consequences in children. Health education research. 2004 Jun 1;19(3):284-9.
5. Spyropoulos P, Papathanasiou G, GeorgoudisG, ChronopoulosE, KoutisH, Koumoutsou. Prevalence of low back pain in Greek public office workers. Pain physician. 2007 Sep;10(5):651.
6. Cardoso JP, Ribeiro ID, Araújo TM, Carvalho FM, Reis EJ. Prevalência de dor musculoesquelética em professores. Revista brasileira de epidemiologia.2009;12:604-14.
7. Nurul I, Haslinda A, Saidi M, Shamsul B, Zailina H. Prevalence of low back pain and its risk factors among schoolteachers. American Journal of Applied Sciences.2010;7(5):634-9.
8. Sikiru L, Hanifa S. Prevalence and risk factors of low back pain among nurses in a typical Nigerian hospital. African health sciences. 2010 Mar;10(1):26.
9. Adebusoye LA, Ogunbode AM, Alonge TO. Magnitude of knee osteoarthritis and associated risk factors among adult patients presenting in a family practice clinic in Nigeria. Journal of Medicine in the Tropics. 2013 Jul1;15(2):144.
10. Beyen TK, Mengestu MY, Zele YT. Low back pain and associated factors among teachers in Gondar Town, North Gondar, Amhara Region, Ethiopia. Occup Med Health Aff. 2013;1(5):1-8.
11. Erick PN, Smith DR.Low back pain among school teachers in Botswana, prevalence and risk factors. BMC musculoskeletal disorders. 2014 Dec;15(1):359.
12. Bandpei MA, Ehsani F, Behtash H, Ghanipour M. Occupational low back pain in primary and high school teachers: prevalence and associated factors. Journal of manipulative and physiological therapeutics. 2014 Nov1;37(9):702-8.
13. Abdulmonem A, Hanan A, Elaf A, Haneen T, Jenan A. The prevalence of musculoskeletal pain & its associated factors among female Saudi schoolteachers. Pakistan journal of medical sciences. 2014Nov;30(6):1191.