



Original Article

Frequency and Risk Factors of Low Back Pain among Health Care Professionals of Jinnah Hospital, Lahore

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ABSTRACT

Low back pain is known as the utmost common health problem among all the population around the globe. **Objective:** Low back pain is a common musculoskeletal disorder involving nerves, muscles and bones of back. It may be associated with a several risk factors like family history, BMI, ergonomics of occupation, exercise habits and stress. A study was conducted to determine the frequency of Low Back Pain and to determine its risk factors among health care professionals. **Methods:** A cross sectional study was conducted among health care professionals at Jinnah hospital Lahore, Pakistan, for a period of four months after the approval of synopsis. Convenient sampling technique was used and all patients during study interval were fulfilling the inclusion criteria. A total of 64 participants were included of age range from 18 to 60 years. Data were analysed by using SPSS Version 16.0. **Results:** The prevalence of LBP among health care professionals is 67%. Among subjects 58 were below 40 years and 6 were over 40 years, 26 reported to have a family history of LBP, 24 participants do exercise, 43 have normal BMI, 12 were overweight, 8 were obese and 1 was underweight. 58 respondents were mildly stressed and 6 were moderately stressed. **Conclusions:** Frequency of low back pain was high in health care professionals with a high frequency in females. Most of the subjects have normal BMI and low perceived stress score.

INTRODUCTION

Low back pain is known as the utmost common health problem among all the population around the globe [1]. LBP has affected 60–80% of the adult population once in their life time [2]. It is the fifth main cause of consulting a physician [3]. There are many causes of pain in lower back ranging from occupational to behavioral and socio-economic as well as metabolic factors. LBP refers to pain or feeling of discomfort in the region of lower posterior margin of rib cage to horizontal fold of glutei [4]. Factors

that can cause LBP can be categorized in three categories; personal, occupational and psychological; age, gender, body mass index, family history, smoking, exercise habits are included in personal factors [5]. Abrupt physical loading, bending forwards, twisting, weight lifting, vibration exposure, staying in same posture for long working hours are among occupational risk factors [6]. Pain in low back take place in almost comparable proportions in all cultural domains, affects the life quality

and functioning at work place. LBP is second most common complaint for doctor visit and the first cause of work restriction [7]. There are two types of low back pain including specific (due to an identifiable cause) and non-specific (due to non-identifiable cause), some of the patients of back pain are of specific causes but many of the cases are non-specific [8]. Acute low back pain is more common presenting complains and resolves without any treatment, it lasts only less than three months [9]. Back pain of chronic nature is a very serious issue and has a solid relation with psychological factors; work related disappointment, boredom and a compensation system contributes to it [10]. Several Risk Factors are found in association with LBP including trauma, old age, bony degenerative changes, poor lifting techniques, smoking, obesity, and pregnancy, lack of exercise, sedentary life style, and alcohol use. Psychological factors strongly influence the prevalence of LBP [11]. Universally, LBP related to occupation has a prominent impact on the number of disability-adjusted life years lost each year. Quite a few physical workload factors, like that of non-neutral trunk postures and various physical handling activities have been linked with LBP. Considering the psychological factors as a significant cause of LBP, stress and anxiety play a vital role. It is stated that depression and anxiety are significant psychological factors in the context of chronic low back pain [12]. The experience of stress, anxiety, and depression is sometimes, but not always, secondary to back pain. In this study, we have determined the prevalence of LBP in Jinnah Hospital health care professionals and have investigated its demographical, behavioral, and psychosocial risk factors. Low back pain is an issue that needs to be cater at all the levels of healthcare including behavioral and psychological level [13]. To cater pain in low back multidisciplinary approach is required and it includes pharmacological treatment, non-invasive approaches of physiotherapy and exercise as well as occupational plus life style changes [14]. Majority of health care professionals including physiotherapists, dentists, physicians, nurses, laboratory workers, caregivers are at a risk of MSK disorders. Though certain literature concerning about this topic is available but it is a necessity for further literature evidence in under developed countries as Pakistan, so that the incidence of various risk factors related to pain in low back can be resolute. This will ultimately aid the health care providers in the management of the patient as a whole rather than just prescribing painkillers and anti-inflammatory drugs or suggesting exercise. Workers in hospital experience more pain in low back than any further groups. Working activities involving lifting, bending, twisting, and psychological stress are regarded as unintentional factors for many back injuries

[15].

METHODS

It was a cross sectional study conducted. The researcher selected cross sectional study because it has no follow up and the frequency can be checked easily through this design of study. A cross sectional study was descriptive study which provides the clear picture of the frequency and characteristics of a disease in a population at a particular point in time. The study was conducted at JINNAH HOSPITAL LAHORE. Approval from the hospital MS was taken before collecting the sample. Researcher selected this area because desired sample was easily available to find out the frequency of low back pain and its relation with the occupation, age gender and stress among healthcare professionals of Jinnah hospital Lahore. Inclusion Criteria: Age 18 to 60, Male and Female health care professionals, Subjects willing to participate. Exclusion Criteria: Congenital back pathology, Pregnancy, Disc pathology, Malignancy. Non probability or convenient sampling was used. A convenience sample group of people who were easily approached by researcher and available for study. Healthcare professionals who were easily available in the Jinnah Hospital Lahore. 64 subjects were involved in the study As most of the subjects were literate, consent was taken verbally before starting the questions and then questions were asked by the researcher. Questionnaires were filled by the researcher and signature of patient was taken at each questionnaire. The data were collected by using 3 scales; Standardized Nordic scale using a portion to determine the prevalence of LBP, Numerical Pain Rating scale to find the severity of LBP and Perceived Stress scale to determine LBP relationship with stress. Approval from the MS of Jinnah Hospital Lahore was taken to conduct the research. Consent of the participants was taken before starting the questions and their privacy, confidentiality and safety were secured.

RESULTS

Table 1 shows the mean age of the respondents is 27±5 years. The results showed the frequency of BMI of Respondents in which the total number of respondents is 64 out of which the frequency of Underweight is 1, Normal is 43, Overweight is 12 and Obese is 8. Table 2 shows that out of 64 participants, 43 experienced low back pain in the last 12 months, 12 individuals were prevented from normal work during last 12 months, and 20 individuals experienced low back pain during last 7 days. The results showed frequency of stress perception related to the low back pain, 58 participants categorize their level of stress as low whereas 6 categorize as moderate level of stress. shows that out of 64 participants 1 was underweight, 43 were with normal BMI, and 12 were overweight 8 obese. High BMI is one of the

risk factors for low back pain, there is positive relation between high BMI and prevalence of LBP. BMI is one of the personal factors that can cause low back pain.

BMI	Frequency (%)	Valid Percent	Cumulative Percent
Under weight (BMI < 18.0)	1(1.6%)	1.66	1.66
Normal (BMI 18 - 25)	43(67.2%)	7.21	8.88
Over weight (BMI 25 - 30)	12(18.8%)	8.81	7.5
Obese (BMI > 30)	8(12.5%)	2.5	100.0
Total	64(100.0%)	100.0	

Table1: BMI of Study Participants

Table 2 shows that out of 64 participants, 43 experienced low back pain in the last 12 months, 12 individuals were prevented from normal work during last 12 months, and 20 individuals experienced low back pain during last 7 days. This illustrates that most of the participants were having chronic low back pain whereas only 20 participants were of acute low back pain.

Incidence	Have you ever experienced pain or discomfort in low back pain during last 12 months	have you been prevented anytime during last 12 months from normal work because of low back pain	have you had low back pain during last 7 days
	Frequency (%)	Frequency (%)	Frequency (%)
Yes	43(67.2%)	12(18.8%)	20(31.3%)
No	21(32.8%)	52(81.3%)	44(68.8%)
Total	64(100.0%)	64(100.0%)	64(100.0%)

Table 2: Incidence of LBP

Table 3 shows that out of 64 individuals 58 scored low and 6 were moderately stressed so there is association of low back pain with stress. Stress and depression associated with work are risk factors for prevalence of low back pain. Results shows that most of the participants were having less stress and only few were having moderate stress perception. There is not significant association of stress with the occurrence of low back pain..

Perceived Stress Scale Score	Frequency (%)	Cumulative Percent
0-13	Low	58
14-20	Moderate	6
27-40	High	0

Table 3: Respondents with stress scale score

Table 4 shows that the severity of pain on Numerical Pain Rating scale was 2.67 ± 2 which is less than NORDIC scale that was 22 ± 5 illustrating that participants with low back pain were having more musculoskeletal disorders as compared to the disability as a result of low back pain.

	Numerical Pain Rating Scale	NORDIC
Mean \pm SD	2.6719 \pm 2.26817	22.1094 \pm 4.87337
N	64	64

Table 4: Standardized NORDIC Scale

DISCUSSION

Low back pain is common in health care professionals. A

study was conducted in which data was collected from 64 individuals, using the NORDIC scale the frequency of LBP was determined and the severity of pain was calculated using Numerical Pain Rating scale, results were deduced on the basis on various risk factors i.e. exercise habits, family history BMI, and perceived stress. In 2020 Jonas Vinstrup and colleagues done a study on perceived stress and its relation with low back pain and concluded that Psychological stress surges with that of LBP among healthcare workers. Categorizing and lessening the occupational-related psychosocial stressors should be included in strategies that aim to prevent musculoskeletal disorders in this population [16]. Similarly, in our study stress is also linked with low back pain and work related factors. In 2017 Ö Çınar-Medeni reported that occurrence of pain at the level of low back in healthcare professionals was estimated to be 53% based on SNMA. That was perceived that pain in low back was commonest among medical secretaries (56.9%) [17]. Increased age, females, high BMI, married, lack of daily exercise routine, and decreased job satisfaction were found to be factors increasing low back pain risk. In 2018 Gutke A. conducted a research about the prevalence and risk factors of LBP in a tertiary care hospital. Among 375 participants 194 were men, the mean patient age was 42.05 ± 15.35 years (mean \pm standard deviation); most of the patients belonged to the 21- to 40year-old age group (48%, n = 180). The majority (78.4%) had chronic back pain; healthcare workers (12.3%, n = 46). The major risk factors identified were identified, and these factors included lack of exercise (76.3%, n = 286), sleep disorder (41.6%, n = 156), anxiety (39.5%, n = 148), and depression [18]. 2018, Foster NE reported that mental wellness, anxiety and depression (as life style factors) were not associated with socio-demographic or physical factors. According to Gunnar BJ Anderson 1999, 70-85% of people have low back pain at some time in their life. The prevalence of back pain per year ranges from 15% to 45%, with point prevalence averaging 30%. The involvement of stress, anxiety, and depression is occasionally, but not constantly, secondary to back pain. My study also depicts that LBP has a high prevalence in health care workers i.e. 67% with a high frequency among females 72% (23 out of 32) than males 63% (20 out of 32). The respondents 58 out of 64(91%) scored low on perceived stress scale [19]. A study done in 2017 on risk factors associated with pain in low back in hospital professionals revealed that occupational activities associated with such profession is linked with high rate of occurrence of back pain. The current study also came up with the same conclusion [20].

CONCLUSIONS

Frequency of LBP is high among health care professionals. Gender has an effect on the occurrence of LBP with

females having greater frequency of LBP. Majority of the individuals have a normal BMI and have low perceived stress score.

Conflicts of Interest

The authors declare no conflict of interest.

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REFERENCES

- [1] Zafar F, Qasim YF, Farooq MU, Shamael I, Khan IU, Khan DH. The Frequency of Different Risk Factors for Lower Back Pain in a Tertiary Care Hospital. *Cureus*. 2018 Aug;10(8): e3183. doi: 10.7759/cureus.3183.
- [2] Billis E, Koutsojannis C, Matzaroglou C, Gliatis J, Fousekis K, Gioftos G, et al. Association of low back pain on physical, sociodemographic and lifestyle factors across a general population sample within Greece. *Journal of musculoskeletal pain*. 2017; 30(2):279-290. doi: 10.3233/BMR-150484.
- [3] Şimşek Ş, Yağcı N, Şenol H. Prevalence of and risk factors for low back pain among healthcare workers in Denizli. *Journal of agricultural research*. 2017 Apr; 29(2):71-78. doi: 10.5505/agri.2017.32549.
- [4] Saner J, Bergman EM, de Bie RA, Sieben JM. Low back pain patients' perspectives on long-term adherence to home-based exercise programmes in physiotherapy. *Musculoskeletal Science and Practice*. 2018 Dec; 38:77-82. doi: 10.1016/j.msksp.2018.09.002.
- [5] Kerr MS, Frank JW, Shannon HS, Norman RW, Wells RP, Neumann WP, et al. Ontario Universities Back Pain Study Group. Biomechanical and psychosocial risk factors for low back pain at work. *American Journal of Public Health*, 2001 Jul; 91(7):1069
- [6] Shiri R, Falah-Hassani K, Heliövaara M, Solovieva S, Amiri S, Lallukka T, et al. Risk Factors for Low Back Pain: A Population-Based Longitudinal Study. *Arthritis Care and Research (Hoboken)*. 2019 Feb; 71(2):290-299. doi: 10.1002/acr.23710.
- [7] Pranjić N and Maleš-Bilić L. Low back pain at new working ambient in era of new economy: a systematic review about occupational risk factors. *Acta medica Croatica: Časopis Akademije medicinskih znanosti Hrvatske*. 2015 Oct; 69(1):49-57.
- [8] Maher C, Underwood M, Buchbinder R. Non-specific low back pain. *Lancet*. 2017 Feb; 389(10070):736-747. doi: 10.1016/S0140-6736(16)30970-9.
- [9] van der Gaag WH, Roelofs PD, Enthoven WT, van Tulder MW, Koes BW. Non-steroidal anti-inflammatory drugs for acute low back pain. *Cochrane database of systematic reviews*. 2020 Apr; 4(4):CD013581. doi: 10.1002/14651858.CD013581.
- [10] Latif A, Sohban U, Sarwar A. Prognosis of Surgical Treatment of Groin Hernias at Allama Iqbal Memorial Teaching Hospital, Sialkot. *Group*. 2018 Jul; 1(437):100.
- [11] Chaiklieng S and Homsombat T. Incidence and postural risk factors for low back pain among informal garment female workers. In *International Conference on Applied Human Factors and Ergonomics 2019* Jul; 222-230. Springer, Cham.
- [12] Paolucci T, Attanasi C, Cecchini W, Marazzi A, Capobianco SV, Santilli V. Chronic low back pain and postural rehabilitation exercise: a literature review. *Journal of Pain Research*. 2018 Dec; 12:95-107. doi: 10.2147/JPR.S171729.
- [13] Rahman SH, Rasdi I, Karrupiah K, Abdullah AM. Risk Factors of Musculoskeletal Symptoms Among Healthcare Workers in a Public Hospital.
- [14] Urits I, Burshtein A, Sharma M, Testa L, Gold PA, Orhurhu V, et al. *Low Back Pain, a Comprehensive Review: Pathophysiology, Diagnosis, and Treatment*. *Current Pain and Headache Report*. 2019 Mar; 23(3):23. doi: 10.1007/s11916-019-0757-1.
- [15] Alnaami I, Awadalla NJ, Alkhairy M, Alburidy S, Alqarni A, et al. Prevalence and factors associated with low back pain among health care workers in southwestern Saudi Arabia. *BMC Musculoskeletal Disorder*. 2019 Feb; 20(1):56. doi: 10.1186/s12891-019-2431-5.
- [16] Vinstrup J, Jakobsen MD, Andersen LL. Perceived Stress and Low-Back Pain Among Healthcare Workers: A Multi-Center Prospective Cohort Study. *Front Public Health*. 2020 Aug; 8:297. doi: 10.3389/fpubh.2020.00297.
- [17] Çınar-Medeni Ö, Elbasan B, Duzgun I. Low back pain prevalence in healthcare professionals and identification of factors affecting low back pain. *Journal of Musculoskeletal Pain* 2017; 30(3):451-459. doi: 10.3233/BMR-160571.
- [18] Gutke A, Boissonnault J, Brook G, Stuge B. The Severity and Impact of Pelvic Girdle Pain and Low-Back Pain in Pregnancy: A Multinational Study. *Journal of Womens Health (Larchmt)*. 2018 Apr; 27(4):510-517. doi: 10.1089/jwh.2017.6342.
- [19] Foster NE, Anema JR, Cherkin D, Chou R, Cohen SP, Gross DP, et al. *Lancet Low Back Pain Series Working Group*. Prevention and treatment of low back pain: evidence, challenges, and promising directions. *Lancet*. 2018 Jun; 391(10137):2368-2383. doi: 10.1016/S0140-6736(18)30489-6.
- [20] Terzi R and Altın F. Hastane çalışanlarında bel ağrısı sıklığı, bel ağrısının kronik yorgunluk sendromu ve

mesleki faktörler ile ilişkisi [The prevalence of low back pain in hospital staff and its relationship with chronic fatigue syndrome and occupational factors]. International Journal of Agriculture. 2015; 27(3):149-54. Turkish. doi: 10.5505/agri.2015.26121.