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Research Article

Prevalence and Occupational Risk Factors of Low Back Pain Among Nurses at Khulna Medical College Hospital, Bangladesh

Dr. Prianka Khan[1*], Dr. Shahria Sattar[2], Farjana Begum[3], Dr. Antora Panday[4], Prionti Saha[5], Dr. Md. Nazmul Hasan[6], Dr. Amit Hasan[7], Dr. Lutfun Nahar[8]

[1*]Doctor (Clinic Co ordinator - Medix signature clinic, United healthcare Services Ltd, MPH (National Institute of Preventive and Social Medicine) Bangladesh, Dhaka. (Orchid- 0009-0002-2688-7538)
[2]Associate Professor, National Institute of Preventive and Social Medicine, Faculty - Occupational and Environmental Health.
[3]Department - Masters of public health, Faculty- Occupational and Environmental Health Institute - National Institute of Preventive and Social Medicine.
[4]MBBS- Green life Medical College, RMO of Adarsha Clinic, Gopalganj. (ORCID iD: 0009-0005-3668-6387)
[5]Department: Medical Services, Faculty/College: Resident medical officer University/Institution: Medix Signature Clinic.
[6]Manager, Medical Services, Medix Signature Clinic MPH, (National Institute of Preventive and Panday.
[7]Resident Medical Officer Bangladesh Shishu Hospital and Institute.
[8]Assistant Inspector General Health,DIFE. City – Dhaka.

Corresponding Author: Dr. Prianka Khan
Doctor (Clinic Co ordinator - Medix signature clinic, United healthcare Services Ltd, MPH (National Institute of Preventive and Social Medicine) Bangladesh, Dhaka.

Email: [1*]Priankakhan40@gmail.com, [2]shahria.sion@gmail.com, [3]farjanakyamc@gmail.com, [4]antorapanday.70@gmail.com, [5]priontisahawsif@gmail.com, [6]nazmulhasan0168@gmail.com, [7]hasan91183@gmail.com, [8]lutfun.hossain@gmail.com

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ABSTRACT

In view of this, a Cross sectional study was conducted on prevalence and occupational risk factors of Low Back pain (LBP) among 374 medical college nurses at Khulna Medical College Hospital in the division of Khulna, Bangladesh. This study was based on cross-sectional design and data were gathered with the help of a self-administered questionnaire and Karasek's job content tool, while analysis was performed with chi-square test. The results revealed that 54.3% of the nurses had severe chronic LBP lasting over 1 year and age, number of years of experience, narrow workspaces and conditions of poor equipment were significantly associated with severe chronic LBP. No specific relations to psychosocial factors were found for the trunk postures however. These findings indicate that interventions and institutional support are required to promote ergonomics in low resource health care settings to reduce MSD at work.

Keywords: Low Back Pain, Nurses, Occupational Risk Factors, Cross-Sectional Study, Ergonomics.

INTRODUCTION

Most of the people working in hospitals as frontline health care workers are nurses, and nursing is physically and emotionally challenging occupation (June & Cho, 2011). They have to be on their feet, bent and lifting their body for long periods of time, which means they are subjected to repeated mechanical strain of the musculoskeletal system (Munabi et al., 2014). Therefore, musculoskeletal disorders are considered one of the most important work hazard factors of health care workers and nurses are one of the occupational professions with the highest risk (Sopajareeya et al., 2009). Firstly, the most common of those disorders is low back pain (LBP) that is typically felt between the costal margins and the gluteal folds and can radiate into the legs (Suliman, 2018). It is a significant contributor to disability and lost work days and work productivity globally (Clark & Horton, 2018). One of the concerns that nurses have is the high number of nursing population who are affected by it (Homaid et al., 2016). Loadignac (2016) says that the aetiology of LBP is multifactorial and it varies according to the person (age, body weight), physical factors (heavy load carried or awkward postures) and

psychosocial factors (control related to work, support offered). The situation is further worsened in Bangladesh due to acute shortage of nurses (population to nurse ratio is approximately 5000:1) which imposes more burden on the nurses (Salma & Hasan, 2020). At low resource settings, less suitable work configurations and limited equipment increases the likelihood of nurses developing back injury, as opposed to nurses working in industrialised countries (El-Soud et al., 2014). The literature in relation to the incidence of LBP among Bangladeshi nurses, however, is limited and most of the studies are related to prevalence and lack attention on modifiable physical and psychosocial risk factors (Islam et al. 2020). Evidence will therefore need to be established in every country/locale to support the fact that LBP is highly preventable and gains can be achieved by the application of ergonomic modifications, training in correct postures and work organisation techniques (Obi, 2016). In the present study, the features of LBP and physical and psychosocial occupational risk factors of LBP are explored amongst the female nurses working in Medical College Hospital at Khulna, Bangladesh (Boughattas et al., 2017).

Literature Review

Low back pain (LBP) is a frequent problem in the general population, is a major contributor to disability and missed work due to back pain, and represents a significant health-care cost (Clark & Horton, 2018). It is a sensation of pain or discomfort located between the bottom edge of the costal margin and the gluteal folds, and can or cannot shoot down the leg to below the knee (De Vet et al., 2002). LBP is episodic, meaning that most individuals have at least one episode of LBP in their lifetime – however, many will experience an immediate relief from LBP, followed by a return of episodes (De Vet et al., 2002). Many are however "nonspecific" (Boughattas et al., 2017) – that is, the pain is not caused by a muscle, nerve or bone abnormality, there is not any compression of a nerve root or fracture that can be found, it does however interfere with one's normal daily activities, and leaves the worker temporarily or permanently unable to work.

The nursing musculoskeletal work environment may constitute a high risk for musculoskeletal injuries. In a biomechanical sense, the patient handling is a difficult and stressful procedure which is performed on the spine and upper limbs and if not performed correctly it can cause immediate pain and/or long-term chronic pain (Sopajareeya et al., 2009). Nursing assistants have been found to be at greater risk of developing back injuries than construction workers and material handlers, thus confirming the challenges in which they are working with patients (Tan & Lamuo, 2010). The caregivers were more likely to experience LBP, as they rated their activities of daily living as more physically demanding (Feng et al., 2007) and the physically demanding the patients' activities of daily living, the more the patients were dependent on the caregiver for the activities. In addition, repetitive bending, twisting, reaching etc. activities during nursing puts back pain at risk as well (Wong et al, 2010). Other epidemiology studies early on also identified the key work factors of LBP as manual handling, and static posture and repetition of activities (Smith et al., 2006).

Studies from numerous other countries will support U.S. prevalence studies. In Uganda, over 80% of 880 nursing professionals reported high prevalence (> 80%) of the new onset of musculoskeletal disorders in their lower back (Munabi et al., 2014). June & Cho (2011) conducted a study of the frequency of back pain among the Korean intensive care unit (ICU) nurses and found that approximately 90% of the intensive care unit nurses surveyed reported back pain at least once a month, while a small sample of the nurses sought medical care. The Jeddah, Saudi Arabia, nurses who participated in the study reported that about half experienced LBP, with the majority of this LBP cases being reported after becoming a nurse (Gaowgzeh, 2019). Another study with 400 nursing workers in Iran has shown that the prevalence is approximately 80% each year (Nia et al., 2011). In Egypt, the study showed high prevalence rate of CLBP among nurses working in university hospitals, due to physical and mental requirements of the nursing profession (El-Soud et al., 2014). In the study done in Addis Ababa, one of the problems encountered by nurses working in public hospitals is LBP (Belay et al., 2013). This has been found to be high in the continent and in Africa, a systematic review identified nursing as one of the riskiest professions (Kasa et al., 2020). Dlungwane et al. (2014) found LBP to be an issue for the nursing staff in regional hospitals, which also experienced work-related dysfunction in their personnel and also accentuated the issue of nursing shortage in South Africa.

Less evidence to draw a conclusion in Bangladesh. The number of LBP was found

significantly high by the result of the cross sectional study of doctors and nurses in tertiary hospitals of Dhaka (Islam et al., 2020) and studied the lifestyle of doctors and nurses, their hours and patterns of working. In the country, there is no activity of screening among medical staff, especially among the nurses for LBP and this is under-documented (Islam et al, 2020). The low ratio of nurse to population, workload and unsafe working conditions all add to the stress for HNs (Salma & Hasan, 2020).

Much attention has been paid to individual characteristic risk factors. Personal factors that have been most frequently studied include age and sex/body weight, but the influence of these factors on LBP is controversial (Elders et al., 2001). Some of the nursing samples list advanced age, BMI and gender as risk factors (Homaid et al., 2016). There is cross sectional meta-analysis which indicates a relationship between overweight and obesity and the prevalence of LBP at 12 months (Shiri et al., 2010). In addition, experience matters - in eastern Ethiopia, a nurse with over five years of experience was more likely to report pain, as was the nurse who had completed a nursing course (Mijena et al., 2020). The Korean intensive care nurses who completed 2-4 years had the highest risk for back pain, which indicated that there was not a linear relationship among 2 variables (June & Cho, 2011). Other risk factors found for developing new back problems include previous back pain (June & Cho, 2011).

Physical and ergonomic risk factors account for most of the reported risk factors. The prevalence of LBP among all nurses in various workplaces was correlated with heavy lifting, handling patient, twist, bend and awkward position (Obi, 2016). When these other factors were added to the model, three factors (Manual lifting >10 kg, uncomfortable position while working, and Low back pain prevalence) proved to be significant risk factors for low back pain in eastern Ethiopia (Mijena et al., 2020). Munabi et al., (2014) found that one of the risk factors for musculoskeletal disorders in Uganda was awkward postures, pushing of heavy loads. In an unfavourable position and with effort, the overall effect is mechanical overload of back tissues and, ultimately, the initiation of an inflammatory process that leads to pain (Boughattas et al., 2017). The lack of facilities for the equipment, lifting support and workspace design is impactful on an LMIC nurse (El-Soud et al., 2014). In addition, working long hours, and working at night and interrupting the normal sleep pattern can lead to fatigue and sleep disturbances, both of which can lead to pain (June & Cho, 2011). It was concluded that inadequate sleep was the strongest predictor of the development of LBP within 1 year in Danish health care workers supporting the role of recovery (Vinstrup et al., 2020).

There has been an increased focus on 'psychosocial aspects of work'. Systematic review of the psychosocial risk factors (high psychological demands and low social support) did show some association with the musculoskeletal disorders in the case of hospital nurses (Bernal et al., 2015). Worry, stress and anxiety are suggested to be the primary psychosocial factors associated with LBP, and psychosocial pressure is said to lead to increased tension of muscles and exacerbate symptoms (Obi, 2016). In other Tunisian studies, psychological factors, high psychological demand and LBP were also demonstrated as an important relationship, while no connection was established with the decision authority and/or social support (Boughattas et al., 2017). This link was identified by research: Nurses in Iran, who had the lowest liking score for the nurse supervisor and the nurse's job pay, had the highest incidence of back pain, (Nia et al., 2011). These are frequently part of the Job Content questionnaire in which the psychological demands, decision latitude and social support are asked (Karasek et al., 1998). Furthermore, it has been considered as a probable cause; because workplace violence was correlated with acute and chronic LBP in Iranian nurses (Rezaee & Ghasemi, 2014).

The impact of LBP is not personal to each individual. The loss of productivity of medical staff, sickness leave/sick leave, early retirement due to LBP, and increasing lack of man power in the medical staff affect the care of the patients (Sharma et al., 2016). Among the nurses in Nepal it was found that modifiable factors and pain factors were associated with LWD, suggesting that addressing pain factors would impact on LWD (Sharma et al., 2016). At a national level, LBP is applied to direct and indirect costs, and workers in low income areas typically will have costs out of pocket. (Obi, 2016)

Therefore, this has been a goal of prevention. A systematic review of RCTs identified that education combined with exercise was effective in reducing the incidence of LBP, but not shoe insoles or a black belt (Steffens et al., 2016). For the effective hospital programmes, it is

recommended that the management support, available equipment, training and risk assessment (Skela-Savič et al., 2017). Overall, the psychosocial aspects are not included in preventive activities and also, frequent visits of the nurse to the patient's home are rarely taken into account, particularly in less developed countries (Rezaee & Ghasemi, 2014).

According to literature, LBP is reported as multifactorial, and is an occupational problem for nurse, but there is inconsistent finding about psychosocial factors and the problem is also less frequent in the context of Bangladesh (Islam et al., 2020). This gap was the beginning of the current study about physiologies and psychologic risk factors among medical college based hospital nurses (Boughattas et al., 2017).

METHODOLOGY

It was a cross sectional study of which 374 nurses were included to find about the cause of LBP among the nurses of Khulna Medical college Hospital. No interference in the relationship or interaction between researchers with respondents in the study, data collection was carried out from responses of respondents that were collected based on convenient sampling, informed consent through written approval acquired before the data collection was carried out. Data on the socio-demographic factors were collected via a face-to-face interview with the self-administered questionnaire while Karasek's job content questionnaire was used for collecting the data related to the physical factors and psychosocial factors. All the results were analyzed statistically to assess association with the intensity of pain, using statistical tests. In addition, analysis is performed to create a complete set of pie charts and figure analysis, and visual chart and flowchart diagrams are provided to show relationships between the occupational physical stressors and psychological demands and low back pain outcome.

RESULTS

Overview of the Findings

In this chapter, the emphasis is on the graphical representation of the data obtained from the medical college hospital of Khulna from which 374 nurses provided the data for the study. Respondents were aged 26 to 59 years (mean 37.14 ± 9.08 years); 77.8% were married and 70.9% held a diploma in nursing. Four of ten (44.7%) clocked over 8 hours' work per day, 48.1% had over 10 years of experience and all performed one shift. 72.7 per cent of the subjects of the study were engaged in heavy loading as an occupation. The three pie charts illustrates the results of pain, pain period and condition of working materials, respectively, while the two bar charts illustrates the association between age group and severe pain. For this they were subjected to chi square test at 5% level of significance for association. Percentages are for the entire sample unless otherwise noted.

Severity of Low Back Pain

From figure 4.4 it can be seen that the majority of the nurses (54.3%) (n = 203) reported severe LBP whereas (45.7%) (n = 171) reported mild to moderate LBP. Consequently, over 50% of the nurses complained of pain sufficiently severe to interfere with their ability to function.The more it was distributed broadly within the body the more it was on the correct axis. Sixty nurses (54.5%) had sudden onset of pain while 49 (45.5%) had the pain gradually, 72.5% have a recurrent time when they had pain. 67% had pain that had spread to other areas, 70.3% had stiffness in the morning, and 74.3% had numbness. Usually the result of lifting loads (81.8%), spontaneous (24.3%) and injury (13.6%). Lying flat was the most common relief measure (77.0%), followed by massage (31.3%), heat (22.7%), medication (14.2%) and normal activity (7.2%). There was a strong correlation between level of severity and type of onset (chi-square = 315.983, 1 degree of freedom, $p < 0.001$) with 96.1% of those that indicated an acute onset rating their pain as severe, and 4.1% of those that indicated a progressive onset rating their pain as severe. Severe pain was also more frequent among nurses with recurrent pain (67.9% versus 18.4%; $\chi^2 = 73.539$, $p < 0.001$) and among those whose pain radiated (70.0% versus 29.9%; $\chi^2 = 57.846$, $p < 0.001$).

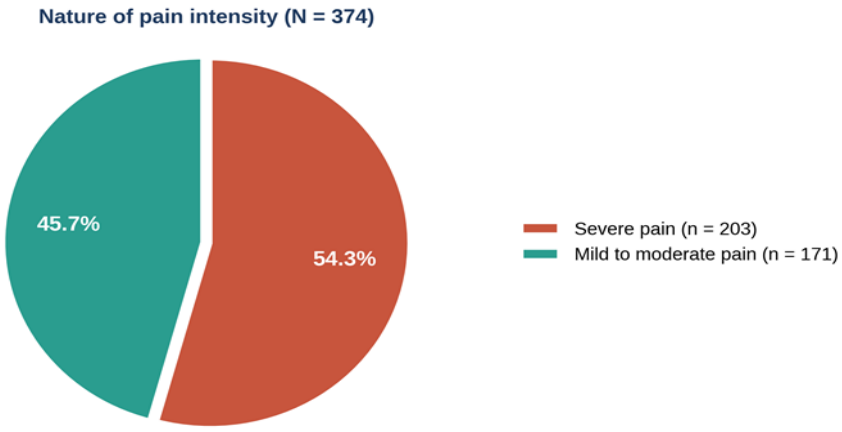


Figure1.1: Distribution of Nurses by Nature of Pain Intensity

Duration of Pain

Most of the respondents reported continuous pain (Figure 4.5). A little over half (54.8%, n = 205) had suffered pain for more than one year, 38.2% (n = 143) for 30 days to one year, and only 7.0% (n = 26) for less than 30 days. Hence, a chronic or recurrent occupational problem was present (some 93.0% had pain for a month or more when compared to occasional pain).Duration was significantly associated with severity ($\chi^2 = 95.688$, df = 2, $p < 0.001$). Only 7.7% of patients age <30 days, 30.8% age 30–1 year, and 76.6% age >1 year presented with severe pain. Association doesn't mean progression (as study was cross sectional in nature); it does mean that the people with the longest duration of their pain are the people who are most burdened.

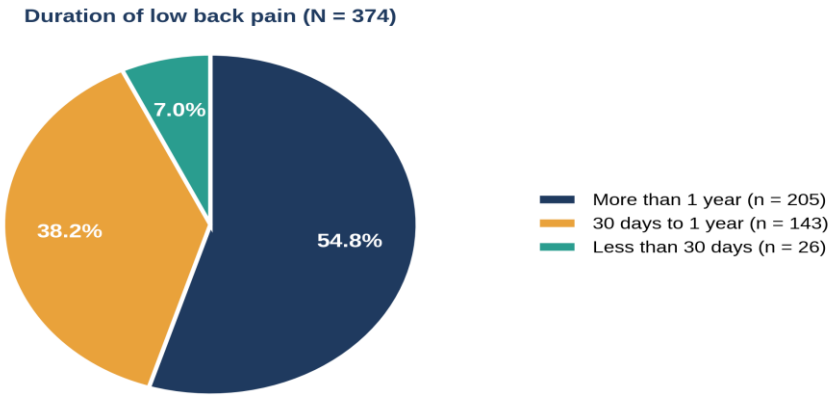


Figure 1.2: Distribution of Nurses by Duration of Low Back Pain

Condition of Working Materials

Figure 4.6: Nurses' ratings based on observations of using the materials to care for patients. Only 13.9% (n = 52) worked with equipment they felt was satisfactory while most said they were bad (63.4% n = 237) or fair (22.7% n = 85). The same applies to the workspace with answers of "narrow" (61.5%), "enough" (23.0%) and "large" (15.5%).Material state was significantly related to pain severity ($\chi^2 = 32.650$, df = 2, $p < 0.001$). Materials were appraised as bad (65.4%), fair (32.9%) or good (38.5%) by nurses while 65.4% of the "good" are also "severe pain". Poor equipment – which may reflect the need for poor equipment requiring awkward positioning with extra effort by nurses – seems to be a big modifiable risk.

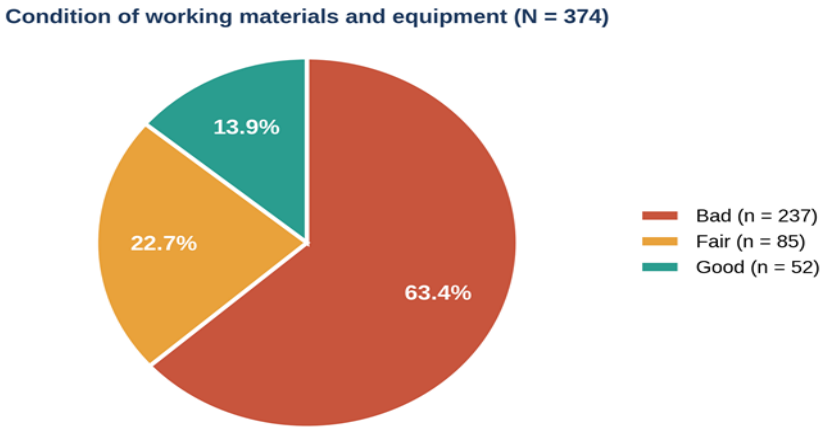


Figure 1.3: Distribution of Nurses by Condition of Working Materials

Severe Pain by Age Group

A comparison of the percentage of experience severe pain among the nurses of each age group is shown in Figure 4.7. There was an increase of severe pain from 30.6% of nurses aged 30 years and under to 54.5% of nurses aged 31 – 40, peaking at 80.7% of nurses aged 41 – 50 and then leveling off at 66.7% of those 51 years and over. Most of the pain was severe except for the youngest age group in which mild and moderate pain was most common (69.4%). Association of age group with severity was also found to be very significant with Chi Square value 54.705 with 3 degree of freedom and p value < 0.001.Working experience followed a similar gradient (χ^2 = 37.232, df = 3, p < 0.001). The proportion of severe pain was 39.2% out of all nurses with less than 10 years of experience and 70.2% of nurse with 11-20 years' experience, 69.7% of the nurses in 21-30 years' experience, and 75.0% of the nurses in 30+ years' experience. The size of the oldest age group (n = 42) may have played a part in the figures for that group being lower, or the worst cases may have retired early from clinical practice, which cannot be separated from the data. Moreover, educational qualification related to severity (p = 0.007) with BSc qualified nurses (-49.8%) having severities lower than that of the Diploma qualified nurses. Equally, work hours/severity (p = 0.015) did not factor into the pattern, as 59.9% of nurses who worked 8 hours or less were as likely to report severe pain as were 47.3% who worked more than 8 hours per day. The BMI was not statistically associated with severity (p .358).

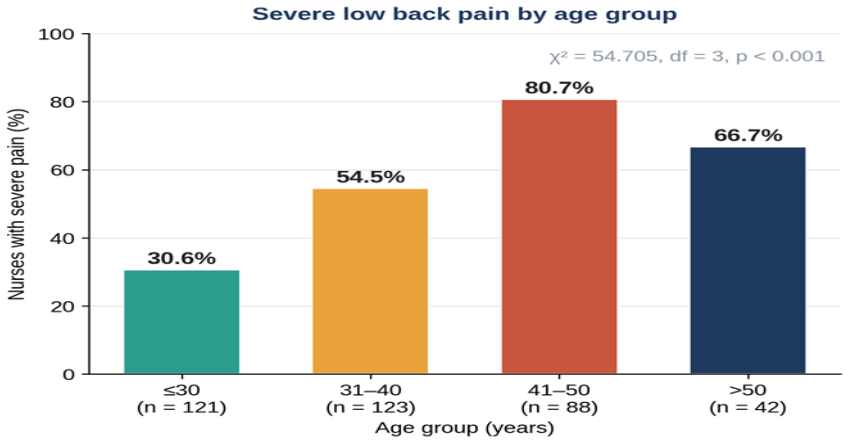


Figure 1.4: Percentage of Nurses with Severe Pain by Age Group

Severe Pain by Physical Work Factors

Many nurses had a high level of exposure to moving and positioning activities, both of which are challenging for them (63.1% and 59.4%). For each of the physical factors, Figure 4.8 presents the number of nurses who report "high levels of pain" as compared to other categories. It remains the same in the Figure. Sixty-six percent of the nurses who worked in the narrow workspace reported severe pain and

34.7% of the nurses who worked in enough and large workspace reported severe pain (χ2 = 36.170, df = 2, p < 0.001). Similar gaps appeared for bad material state (65.4% versus 35.0%), difficulty raising patients (66.5% versus 33.3%; $\chi^2 = 39.400$, p < 0.001), difficult material handling (65.1% versus 32.0%; $\chi^2 = 36.485$, p < 0.001) and difficulty maintaining patients in position (66.7% versus 36.2%; $\chi^2 = 33.782$, p < 0.001). A nearly 2-fold higher level of serious discomfort occurred in each of these groups with high exposure.Not all of the physical factors could be correlated to severity. Trunk flexion (p = 0.490), trunk torsion (p = 0.742), frequent bending (p = 0.655) and twisting (p = 0.871) showed no significant relationship. Remarkably enough, this was a work nature where heavier lifting is regarded as significant (p = 0.013), but the other way round would be expected, and perhaps should be treated with caution and cross-checked with the definition of the categories - the hefty lifting group had more with mild (p = 50.4%) and more with severe (p = 64.7%) symptoms. In addition, sedentary work was found to be significantly associated with severity (p = 0.029) with 60.2% of the sedentary nurses rating their pain as severe.

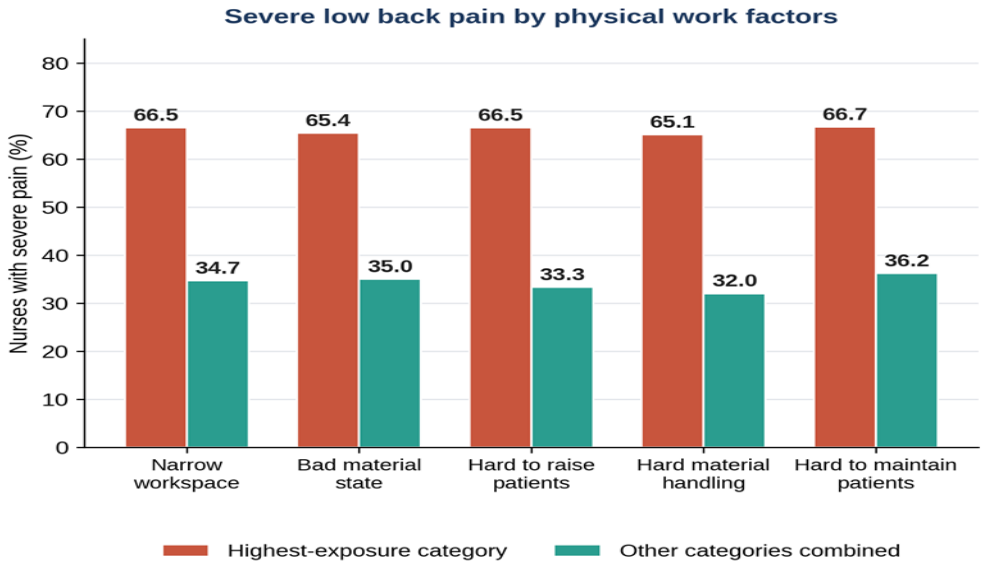


Figure 1.5: Percentage of Nurses with Severe Pain by Physical Work Factors

Psychosocial Factors

Those nurses scored low in level of decision authority (88.5%), high in psychological demand (93.0%) and social support (57.8%) on the Job Content Questionnaire. Severity of the pain did not significantly correlate with psychological demand (p = 0.650), and social support (p = 0.155). It was done with care, as the decision authority was (p = 0.030); and that the onset of severe pain becomes more common in the low authority group when compared to the small high authority group (69.8%, n = 43) versus the low authority group (52.3%). The proportion of not at all interested' (42.5%) were less than 'friendly' (67.1%) for supervisor and co-worker responses at item-level, respectively. Overall however, the physical environmental was more related to the pain than psychosocial.

Summary of Findings

Note that the charts indicate that low back pain is common, disabling and lasting in these nurses. These pie charts show that workforce pain is broad-based and persistent and these bar charts give detail of the burden of this pain. The extent of risk apparently related to risk factors of number of years of experience, duration of exposure, frequency of exposure, working in confined areas, uncomfortable bedding, and stress of making physical contact with patients. No clear association was found between the psychosocial measures and no clear association was found between Trunk Postures. The study was a cross section design with convenience sampling and is therefore, descriptive and showing association rather than causality, and may not be applicable to other hospitals. They suggest, however, that it clearly relates to practical requirements: improved equipment and space, patient handling equipment and special facilities for older/experienced nurses.

Conclusion and Recommendations

Results showed that LBPs is a serious occupational health problem of Khulna Medical College Hospital nurses. Of the 374 responders, 54.3% had severe pain, 93.0% had pain for over 1 month and 54.8% for over 1 year. Recurrent pain, radiation, morning stiffness and numbness were other complaints. This aligns with the findings that LBP is a significant contributor to work limitations and disability from a global perspective (World Health Organization [WHO] 2023). Similar results have been obtained in Bangladesh where low back pain is reported to be a major complaint of nurse involvement and to lack of staffing, overtime, and manual lifting (Sanjoy et al., 2017). Based on the results it is for that reason possible to view LBP as an occupational/organisational handling problem.

It was determined that the physical working environment had the strongest relationships. The number of nurses reporting experiences of severe pain rose significantly on the following survey items: "Narrow workspaces", "poor materials", "difficulty raising patients", "difficulty handling material" and "difficulty maintaining patients in position". These findings are consistent with other ones that showed nurses working with patients are at risk because of the loads they have to carry and the awkward activities they are required to perform (Johnson et al., 2023). A systematic review found moderate evidence of an association between lifting/carrying loads, non-neutral posture and chronic low back pain (Jahn et al., 2023). Similarly, healthcare workers (HW) are known to suffer from physical hazards like lifting and pulling patients and manual handling during their work (Al Amer, 2020). This was also supported by a study in low back pain (LBP) in medical students and nursing students with a prevalence of LBP (Wong et al., 2021).

Such relationships between age, work experience and pain severity should be broken. The level of pain was greater in older age group and more experienced nurses. However, the findings in the current study do not support other results as this study was a cross sectional study and used convenience sampling method. Again, it is surprising that there is a strong relationship with the number of working hours, indicating that working time is not sufficient to explain the amount of pain. Some weaker relationships were seen for trunk flexion, trunk torsion, bending and twisting of the trunk, indicating that such movements should not be thought of independently of the overall context of the work. A holistic treatment should be employed including education, exercise, rehabilitation, and decreasing physical burden as recommended by WHO (2023).

There is need to work on further improvements of the work space and equipments in the hospital management. Inappropriate patient-care materials need to be replaced/repaired and the bed, trolley and equipment should aim for minimising force/strain. Workplace training and the provision of assistive devices is necessary in order to ensure safe patient handling systems. In a systematic review and meta-analysis, Abdul Halim et al. (2023) demonstrated that assistive devices, especially motorized ones, have the potential to reduce work-related musculoskeletal risks in healthcare workers. Yoshida et al. (2022) assessed the movement of the spine and pelvis of three participants who receive assistance for horizontal loading and unloading of the chainsaw while standing next to the machine.Similarly, the results of the experimental studies indicate that the duration of the spread of the trunk during the loading and unloading actions on the side of the chainsaw was shortened when using an assistive device (Yoshida et al., 2022). Furthermore, more recently, evidence suggests that a mix of ergogenic training and engineering may be beneficial to musculoskeletal outcomes among nurses (Rahgoshay et al., 2026).

More ergonomic assessment needs to be done especially in areas of high demand. Training should include safe transfers, positioning, and equipment usage as well as body mechanics and reporting early signs. Safe handling should not be the only method – there will also be equipment for good handling (Johnson et al., 2023). Nurse staff should be supported to assess and rehabilitate for recurrent and/or long term pain, especially for older, experienced nurse staff. The findings obtained from the nursing study also suggest that there is an urgent need for ergonomics education, strengthening exercise and lifting technique to avoid OLP (Kanakkarthodi et al., 2022).

Further investigations should involve larger and more representative samples of study participants and follow-up designs that investigate the association between occupational exposures and pain over time. The intensity of pain should be measured in the intervention studies conducted in the Khulna Medical College Hospital to know that whether

the intensity of pain among patients is decreased or not with improved equipment, space or patients handling procedure. The findings suggest that a comprehensive strategy is required, including addressing issues by a combination of using AT, ergonomic redesign, safe patient handling and offering supportive and ongoing occupational health care for the benefit of nurses' health, work capacity and quality patient care provision.

Data Availability Statement

A total of 374 nurses were sampled from Khulna Medical College Hospital (KMC), Bangladesh for the study. Information was gathered with a self-administered questionnaire and the Karasek Job Content Questionnaire (JCQ) for the socio-demographic and physical, occupational and psychosocial factors associated with LBP. The research was carried out with the cross-sectional method where it was given written approval and informed consent prior to the data collection. Ethical and institutional issues do not cover restrictions on the access and sharing of data collected and analyzed in this study and data can be made easily available on reasonable request from corresponding author. Relevant information will be given as needed and participants' confidentiality and privacy will be safeguarded.

Funding Statement

This study is aimed to look into the prevalence and occupational risk factors associated with Low Back pain among nurses of Khulna Medical College Hospital. The study was conducted in two stages, namely, the collection of the data was done by the use of questionnaire from 374 nurses while on the other hand, and statistical analysis of the collected data was done. The research document reports no cash resources or support from a research grant, commercial supporter or institution. No special external financial support was spent on this investigation related to the design, data collection, data interpretation and writing of manuscript. The research was conducted independently with the findings of the research being based on data acquired from the nurses engaging in research during the period of research.

Conflict of Interest

This study has no conflict of interest. This study aimed at explaining the prevalence of low back pain and risk factors of the occupational among the nurse cadre in Khulna Medical College Hospital (KMC), Khulna, Bangladesh. This research method is cross-sectional research design with research instruments used questionnaires, there were 374 people who were asked to fill out with questionnaire, to 374 nurses were given questionnaire to complete asKarasek Job Content Questionnaire. The occupational, physical and psychosocial RFs were studied, and only the relationship between the LBP severity and these RFs were examined. The authors have no conflict of interests to declare with regard to this research or the suggestions made in the research which could have impacted the process, analysis or interpretation or preparation of the research report or have interferred with the research process.

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