

Perceptions Of Bangladeshi Nursing Personnel About Manual Handling And Impact On Their Low Back Pain

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Aims and objectives. To identify the association between Bangladeshi nurses at Z H Sikder Women's Medical College & Hospital between manual handling factors and low back pain.

Background. Nurses have been noticed to be more vulnerable to low back pain as compared to other medical personnel in a hospital setting, due to the nature of their job which is physically demanding. Their regular work involves common activities such as patient heavy hand transfer and often twisting and bending as important risk factors for low back pain.

Design. A quantitative cross - sectional and descriptive design.

Methods. All clinical nurses in all departments / wards of the Z H Sikder Women's Medical College and Hospital were included in the population and sample of this study. A total of 150 nurses were involved in this study and the primary data was collected through self-administered questionnaires. A 108 (72%) response rate was achieved.

Results. The findings of this study show that most of the nurses' demographic data variables (gender, age, designation, length of service, position at this hospital, working hours, manual lifting, supporting staff, prolong standing hours, working condition) have non- significant relationship with Low Back Pain. In other findings of these studies, it has established that age related factors, work environment factors and occupational factors are significantly correlated with low back pain among Bangladeshi nurses

Conclusions. The researcher noticed, however, that other considerations than demographic and manual handling practices might also theoretically assess low back pain in nurses. In the end, while the findings include important detail on the occurrence and risk factors of low back pain in the staff, the reports are restricted to particular patient patients. And it is not necessary to generalize widely

Relevance to clinical practice. Nursing management and direct care providers should discuss about how they feel about the hospital's manual handling policy. It's essential to remember that staff practises and behaviours are frequently

influenced by their ideas and perceptions of policy. As a result of the results in Bangladesh, the Bangladesh Ministry of Health will need to consider low back pain prevention strategies for nurses and anyone working in similar situations. In addition, the findings of the research will be used by the health ministry to develop health policies that will improve the quality of life and working circumstances of health professionals and other related personnel, as well as their functional performance.

Key words: Manual handling, hospital, nursing, low back pain, policy

Introduction

Low back pain (LBP) is characterized as pain or discomfort that occurs below the costal margin and above the gluteal fold, also known as lumbago ([Dagenais, 2008](#)). LBP is one of the leading public health issues with more than 80 % of the world 's population registering LBP at a certain point in their lives ([Barrey&Huec, 2019](#)). In low-and medium - income countries the prevalence of LBP is strong ([Wáng, Wu, & Santiago, 2018](#)).

LBP in hospitals is a major cause of morbidity. The healthcare provider is more susceptible to the LBP among the occupational groups([Maher, 2017](#)) . A US study shows that nursing is one of the most dangerous back pain professions and has the highest incidence of nonfatal injuries of any kind ([Buchbinder, Tulder, Öberg, & Costa, 2018](#)). LBP threats are usually multifactorial, likely as the work needs a variety of physically and mentally demanding activities (such as crisis management) (e.g. manual care of patients or medical equipment). Ferreira and his colleagues have addressed physical and psychological pressures on muscle pain([Ferreira, Costa, Stein, & Hartvigsen, 2019](#)).

Furthermore, low back pain is a global health problem in the global economic, societal and public health industries, which raises and produces billion dollars each year in medical spending ([Kawamata et al., 2019](#)). According to [AlShayhan and Saadeddin \(2018\)](#) and [Parreira, Maher, Steffens, and Hancock \(2018\)](#), this is recorded as the most prevalent musculoskeletal occupational danger. A decade ago in America, low back pain was said to be one of the greatest occupational risks and to kill 5.4 million Americans a year([Galliker, Scherer, &Trippolini, 2020](#)). According to [Qaseem \(2017\)](#) America's low back pain economic burden is stated to be growing. In the United Kingdom (UK), back pain is also described as a specific health problem impacting the workforce and the leading causes of disability([Almeida, Saragiotto, & Richards, 2018](#)).

Moreover, Gardner reports that approximately 1% of adults in the UK are chronically left with low back pain. But while back pain is not life - saving, the epidemiological and economic crisis in the UK has increased dramatically, amid diagnostic and therapeutic advances([Almeida et al., 2018](#)). In addition, as low back pain is a global health problem, its etiology was not clear ([Beyera, O'Brien, & Campbell, 2019](#); [Chiarotto, Ostelo, Boers, &Terwee, 2018](#); [Urits, Burshtein, Sharma, Testa, & Gold, 2019](#); [Wood & Hendrick, 2019](#)). [Ziaei et al. \(2017\)](#) argue, instead of merely jobs, that back pain could be related to normal activities every day. The

authors show that people with more physically demanding jobs have had more low back pain than those with less physically demanding jobs or even those who do not function. But again, [Ziaei et al. \(2017\)](#) support that subject to increased physical expectations have raised back pain symptoms. Consequently, it could be concluded that ordinary daily living practices appear to aggravate back pain symptoms based on the evidence. First, people who are already exposed to higher physical demands, and second, people with experience of low back pain are worsening([Buchbinder et al., 2018](#)). The authors also suggest, in cases of chronic low back pain, that low back pain can be caused by spinal dysfunction, which occurred as a consequence of a mechanical overload in the spine. [Edwards, Hayden, Asbridge, and Magee \(2018\)](#) reported that very little knowledge on low back pain in the population of low income countries is accessible. However, it has been generally assumed that low back pain in Africa is less than in developed countries, while in the next decade it will increase([Edwards et al., 2018](#)).

Research results show that low back pain is also a serious problem in South Africa. Approximately 30,000 people in South Africa suffer pain every day. Of these, 10 percent suffer from more than 3 - 6 months in suffering. Furthermore, an estimated cost of approximately US\$ 20 million in 2010, paid in the case of low back pain in South Africa ([Morris, Daniels, Ganguli, & Louw, 2018](#)).

[Morris et al. \(2018\)](#) also estimate that 80 percent of South African employees had severe discomfort and impairment at a certain stage in their working lives owing to low back pain. [Doualla, Aminde, Aminde, and Lekpa \(2019\)](#) claim therefore that low back pain is one of the key reasons for people missing work and one of the most common conditions that health professionals manage. Likewise, Bangladesh faces the same low-duration problem, one of the most crippling and expensive conditions of the country, as other countries do ([Iqbal, 2021](#); [Yesmin, 2018](#)). In addition, the authors stated that the estimated costs were US\$ 975 000 for patients with low back pain who were moved for further care outside Bangladesh between 2007 and 2017([Yesmin, 2018](#)). [Iqbal \(2021\)](#) adds that the major musculoskeletal condition handled by physiotherapists in government hospitals in Bangladesh has been reported to be chronic low back pain. Likewise, in another research carried out in India, [Goswami \(2016\)](#) suggest that low back pain is an important cause of disablement and absenteeism in the western world in low income. They note that low back pain influences the complex mean life of adults in particular, and this affects the social economic status of employees, employers or the wider society in one manner or another. In general, low back pain can be considered a general health problem in low and high income settings. In comparison, there is a poor understanding of the origins of low back pain and there is no evidence that physical exercise is contributing to the prevalence, prevention and treatment of low back pain([Foster, 2018](#)). [Goubert et al. \(2018\)](#) suggest however that physical activity may be believed to have the potential to prevent low back pain, depending on the extent and duration of the physical activity. Similarly, randomized research studies have found that exercise interventions reduce low back pain in at-risk populations and leisure activities help prevent low back pain physical activity ([Iqbal, 2021](#); [Moghaddam, Anbarian, Ilbeigi, Tapak, & Hosseini, 2021](#); [Ng, Urquhart, Fitzgerald,](#)

[Cicuttini, et al., 2021](#); [Provenzano, Heller, & Hanes, 2021](#)).

Other randomized controlled research by [Belitskaya-Levy, Clark, Shih, and Bair \(2021\)](#), however, suggests that although exercise therapy is usually effective in low back pain control, it may not be ideal for all those who experience low back pain.. The authors therefore recommend more research should be done to identify specific exercise interventions in well-defined populations of low back pain patients. In all occupational groups, nurses have suffered one of the highest levels of back injuries.

There is an increased prevalence of low back pain in nurses due to the great number of physical activities, such as care and transitions and the pathologic risk of their type of work ([Balagué, 2012](#); [Barbari, Storari, Ciuro, & Testa, 2020](#); [Gupta, 2015](#); [Johnstone, 2020](#); [Ma, 2014](#)). Similarly, of all health - related professions, nursing professionals have been listed as the most vulnerable to back issues through performing their jobs, such as patient elevation and transition. Biomechanical studies have therefore demonstrated that those gestures lead to high spinal tension([Wood & Hendrick, 2019](#)). In comparison, low back pain in the British National Health Service is said to have been a particular problem for nurses in the UK contributing to the cost of work, lawsuits and reimbursement([Michailidou, 2018](#)) [Jovičić, Brkić, Mimić, and Marković\(2016\)](#) reports that nurses in America are among the most vulnerable workers to work - related injuries and low back pain as a critical problem in the United States. In contrast, researches in some African countries demonstrate the prevalence of low back pain among nurses ([Ahmed, Maharaj, Nadasan, & Kaka, 2021](#); [Doualla et al., 2019](#);

[Morris et al., 2018](#)). Studies among hospital workers conducted in India indicate that low back pain in approximately 75% of the cases of low back pain is linked to the essence of occupational work, in particular physical labor ([Murtagh, 2021](#)). Murtagh studies have shown a high prevalence of low back pain among nurses at 74 percent of patients at a major hospital in Sri lanka ([Murtagh, 2021](#)). The findings of a recent New Zealand study show that low back pain (69 percent) is also prevalent in nurses in one of its rural hospitals([Tumilty, Adhia, & Rhodes, 2017](#)). Overall, nurses are without doubt among the professional workers that are exposed to low back pain of all occupations according to studies done worldwide([Hill, Bedford, Houston, & Reid, 2020](#); [Newlands, Reid, & Palmar, 2015](#)). Manual treatment and psychosocial factors were used to induce low back pain in the nurse, most of the studies have been performed. Lifestyle factors such as recreational activities, in addition to smoking, have however not been given less attention([Parreira et al., 2018](#)).

Besides, Healthcare staffs in Bangladesh, and nursing personnel in particular have understood for several years to be a high risk group on physical activity and back problems ([Yesmin, 2018](#)). [Doualla et al. \(2019\)](#) presented epidemiological observations from 1960s to the 1980s nearly 20 years earlier. This was supported by a point prevalence of around 17%, an annual (period) prevalence of 40 to 50%, and a lifetime prevalence of 35 to 80 percent, among the highest risk occupations for low back problems. Differences in methodologies, illness descriptions, the nursing demographic being addressed, duration and variety of interventions rendered the analysis of and summarisation of studies more challenging. [Hartvigsen \(2018\)](#)

also reflected on the difficulties in comparing studies of epidemiological pain in nursing, but concluded again that nursing was one of the career with most issues with back pain regardless of the metrics used: pre-valence of the lifespan, the prevalence of times, point prevalence, injured rate at least temporarily and the compensatory occurrence ratio.

Hospital workers tend to have higher LBP concentrations compared to the general population because of physical and human factors such as stress in the recent studies ([Friedman, Cisewski, Irizarry, & Davitt, 2018](#)). Many studies have investigated LBP and established the health services industry as a high risk workstation in relation to specific working groups LBP([Edwards et al., 2018](#)). The Annual Report of the Health and Safety Authority (Ireland), [Michailidou and Marston \(2018\)](#) reveals that 32% of all non - fatal health and social care work injuries are back injuries, whereas the rates are 26% for all areas of the workplace. However, only specific occupational classes have been focused on research on incidence of LBP, risk factors and effects of healthcare workers and study has largely focused on the nurses([Michailidou& Marston, 2018](#)). Some studies compare nurses with the general population while others associate the health workers with non health sector workers([Lim, Ma, Berger, &Litscher, 2018](#)). Therefore, it is difficult to establish whether a higher risk of LBP or any higher levels of LBP respiratory disease are actually associated with certain professions in the health sector. The concentrations in Bangladesh are not well established. This research therefore aims to identify whether certain professions in health services have higher levels of LBP or associated absence. Moreover, this study addresses the following questions: i) What is the relationship between demographic data (gender, age, designation, length of service, position at this hospital, working hours, manual lifting, supporting staff, prolong standing hours, sleeping hours, working condition) and Low Back Pain among nurses in Z H Sikder Women's Medical College & Hospital?; ii)What is the relationship between age-related factors and Low Back Pain?; iii) What is the relationship between work environment related factors and Low Back Pain?; iv. Is there any significant relationship between occupations related factors and Low Back Pain?

Literature Review

Common predisposing factors of Low back pain

Findings from most literature on low back pain could not describe but its symptoms, the source of low back pain([Russo, Deckers, Eldabe, &Kiesel, 2018](#)). The occurrence of lumbar pains as well as of other body muscle pains, exhaustion and interrupted patterns of sleep of employee have been due to occupational conditions associated with increased labour pressures among health workers. [Lima, Ferreira, Reis, Paes, and Meziat-Filho \(2018\)](#) found a strong manual pressure on 69.9% of nurses suffering from low back pain. [Panwar \(2018\)](#) In his research he also discovered that the working environment was one of the perceived causes of low back pain recorded by the nurses where nurses said that more stress was needed in the case of a large number of patients. In addition, several researchers have found that the specific causes of low back pain are not well understood or not well reported([Járomi, Kukla, &Szilágyi, 2018](#); [Lima et al., 2018](#);

[Morris et al., 2018](#); [Olafsson, Jonsson, Fritzell, & Hägg, 2018](#)). However, some often mentioned causes of risk apply to both employed and non-employed people. These include: heavy work([Yan et al., 2021](#)), repeated bending ([Skinner et al., 2021](#)), twisting([Provenzano et al., 2021](#)), lifting([Murtagh, 2021](#)), dragging & pressing ([Morais et al., 2021](#)), aggressive motions ([Janapala et al., 2021](#)), static postures such as prolonged sitting and embittered postures([Haji, Taddesse, Serka, & Gebretsadik, 2021](#); [Suliman, 2018](#); [Weis, Barrett, Tavares, Draper, & Ngo, 2018](#)). It is added on the other side that a high risk factor in the ward was foreign to nurses with low back pain due to increased physical labor load. However, [Mijena, Geda, Dheresa, and Fage \(2020\)](#) argue back pain could more easily be correlated with routine daily activity than function alone, so that the habits in people's daily lives could be the main causes of low back pain. Similarly, in Hong Kong, 30-5% of auto-reporting low back pain among nurses was correlated with housework, which culminated in daily activity limits, fatigue, and walking interruptions ([Yu et al., 2020](#)). [Pergolizzi and LeQuang \(2020\)](#) suggest that low back pain may be caused by damage to the lumbar spine neuro-muscles, ligaments, nerves, bones, and vertebrae. [Cherkin, Balderson, Wellman, and Hsu \(2018\)](#) also noted in their analysis that the older age factor was a risk factor for low back pain due to the possibility of associated degenerative spinal processes. Further findings in the literature suggest that as a result of old age, many diseases are emerging which render the elderly function less efficient for physical demands([Gupta, 2015](#)). [Newlands et al. \(2015\)](#) on the other hand, have reported that poor muscle strength and stability may lead to poor posture, which can lead to muscle and joint weakness in the back resulting in back pain. Studies have also suggested some common physiological triggers of low back pain and different factors([Bishop, 2016](#); [R. Chou, 2007](#); [Dagenais, 2008](#); [Hoy, 2012](#); [Koes, 2006](#)). These involve soft tissue injuries in the neck as a consequence of compression, ligaments, and knees sprained or weakened muscles due to poor posturing, prolapsed disks and excessive loading. In addition, disruption to the structures mentioned above may also impact the spinal nerves that are innervating the legs and the spine and therefore causing low back pain. Also, low back pain may also be caused due to vertebral body trauma, often related to renal disease due to osteoporosis, rheumatoid arthritis and osteoarthritis ([Gupta, 2015](#); [Kongsted, 2015](#)).

Manual Handling related Low Back Pain

Several reports have shown that the back conditions of nurses are extremely high([Johnstone, 2020](#); [Kwegyir-Afful et al., 2018](#); [Lecca et al., 2020](#)). This is largely due to the manual handling of the work. Heavy lifting also takes place by nurses with a bent or twisted stance and biomechanical tests have shown that these exercises cause high spinal pressure. Risk control techniques include the removal or adjustment of behaviors with the highest risk, but it is first necessary to evaluate the risk levels linked to different tasks([Champion et al., 2021](#)). In addition, studies have shown that manual therapy is a well-known and effective cause of low back pain in adults ([Lecca et al., 2020](#); [Nolan, O'Sullivan, Stephenson, O'Sullivan, & Lucock, 2019](#)). Moreover, [Elliott \(2015\)](#); [Verbeek et al. \(2012\)](#) also supports the fact that low back pain is popular to healthcare providers throughout the world since they perform manually in hospitals. However, the previous studies show that low back pain remains a huge global challenge with an increased prevalence

spite of all the efforts to prevent it([Gupta, 2015](#); [Kane, 2015](#); [Kay, Evans, & Glass, 2015](#); [Silvetti et al., 2015](#)). There may be a missing element to fix in future research surveys, in particular. The assessment is backed by biomechanical examination but also by epidemiological evidence. This study reports on the possibility of back problems in nurses as a consequence of the literature review above in relation to manual handling tasks.

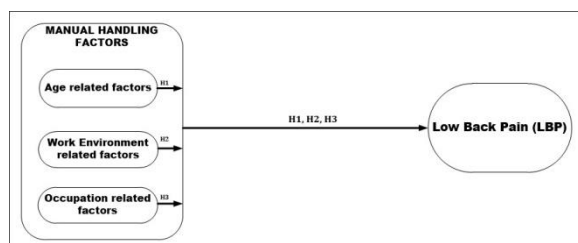


Figure 1: Research Model

Methodology, design and methods

This study used a descriptive quantitative cross - sectional approach. [Fischer \(2014\)](#) notes that for research studies to determine the relationship between two or more variables, a quantitative design is appropriate. [Getliffe \(2008\)](#) further suggests that a definition of what happens, as well as how significant or important and how often anything arises is represented in a descriptive design. The study population and sample involved all medical nurses presently employed with patients in all the sections/wards at Z H Sikder Women's Medical College & Hospital. At Z H - H Sikder Women's Medical College & Hospital there are reportedly 150 medical nurses. Three of the 150 nurses are doing administrative work only, and were thus not included in the study population. Every three months, hospital staffs move to another department and thus have the same work load over a period of time. There are a total of 185 nurses at Z H Sikder Women's Medical College & Hospital, but only 150 of these nurses were regarded as 35 were working in workplaces other than Z H Sikder Women's Medical College & Hospital. 108 Nurses participated in this study.

Instrumentation

For the collection of data, a self - administered questionnaire is used. A request for socio - demographic information, gender, age , marital status, work experience, the current department of work and education level will be made for the first part of the Questionnaire. The second section reveals the manual handling causes and eventually, the low back pain related questionnaire will be asked at the third section. The questionnaires were adopted from different scholarly publish journals (see the table 3.1). The items chosen are centered on the Likert scale scale (e.g. five point) for different constructions in this study. The main reason for using the Likert scale is that the collection of information from respondents using the survey method is popular and easy. All items included in this questionnaire were assessed using a Fivepoint Likert scale (1) with the exception of demographic variables (gender, age , education, experience, and so on). The

questionnaire consists of 25 questions, primarily assessing the frequency of each of the tasks in the five activity areas as stated above. The items for the survey are also adopted from some scholarly articles and the table (3.2) list down the sources below:

Table 1: Sources of the adapted Instruments

Variable	Sub-Constructs	No of Items	Source of the survey
Manual Handling Factors	Age related factors	5	Sanjoy, Ahsan, Nabi, Joy, and Hossain (2017)
	Work Environment related factors	5	
	Occupation related factors	5	
Low Back Pain (LBP)		10	Goswami (2016)

Analysis and Findings

Response rate

Gender

With a total of 60 (55.6%) female respondents and 48 (44.4%) female respondents, this analysis shows that the female respondents are far higher than the male respondents.

Age

Most of the respondents come from age groups 30-34 years, of 27 (25.0 per cent) respondents. The second largest age group is 35-39 years and 40-44 years, with 19 respondents in each category comprising 17.6 percent of the sample. 20-24 years, 55 years and above, 25-29 years, 45-49 years and 50-54 years with 17, 9, 8, and 01 respondent(s) are among the minority age groups, representing 15.7%, 8.3%, 7.4%, 7.4% and 0.9% respectively.

Designation

Regarding designation of the nurses, the majority of the respondents are ordinary nurses, with a number of 65 and percentage is 60.2%, contributed to this study. This is accompanied by head nurses in this survey, with 43 respondents comprising of 39.80%.

Years of Service

The majority of the respondents (N=27; 25.0%) are in this service for 10-14 years, followed by 20 respondents (18.5%) with 5-9 years, 18 respondents (16.7%) with 15-19 years and 17 respondents (15.7%) 20-24 years' experiences. Only two persons with the experience of 30-34 years are still serving people.

Position

Most of the respondents are permanent basis nurses (N=45; 41.7%), and casual basis (N=38; 35.2%) nurses, whereas only 25 nurses (23.1%) are working as volunteer basis.

Weekly Work hours

Most of the nurses (N=63; 58.3%) work for regular 8 hours' duty, while 45 nurses (41.7%) replied that they performed overnight in every week. **Manual Lifting**

One of the major findings from this study is that around 99.1% nurses have to perform manual lifting related jobs.

Supporting Staff

Regarding supporting staff, 70 participants (64.8%) replied that they are provided by supporting staff, while 38 nurses (35.2%) replied negatively.

Prolong standing hours

Regarding the prolong standing hours of nurses, the majority of the participants (N=63; 58.3%) have to work with 2-3 hours standing and 30 (27.8%) nurses replies that they have to perform their job with 12 hours and more prolong standing, which is a unexpected finding of this study. The minority of the nurses (N=15;13.9%) have to work with 1-2 hours standing situation. **Sleeping Hours**

Give the sleeping hours, the maximum number of nurses (N= 61; 56.5%) have got 6 hours and more for their sleeping, but 30 (27.8) nurses replied that they even get less than 6 hours for sleeping after their nursing job.

Working Condition

Moreover, 43 respondents (39.8%) have found their working condition is "fair", 14 participants (13.0%) found "very good" and 23 participants (21.3%) found the condition is "good". However, 19 nurses (17.6%) replied that the working condition is "bad" and 9 (8.3%) nurses are strongly negative about it as they replied "very bad".

Table 2: Descriptive Statistics (N =108)

Construct	Mean	Std. Deviation
Age-related factor	4.25	.41
Work-environment related factor	4.21	.50
Occupation related factor	4.20	.48
Low back pain	4.28	.44

Note: 1-Strongly Disagree; 2- Disagree; 3- Neutral; 4- Agree; 5- Strongly Agree.

Independent Sample T-Test Analysis

To identify the relationship between gender and low back pain among the nurses in Z H Sikder Women's Medical College & Hospital, a parametric test (t-test) was performed (table 3), and found no significant difference between female nurses' low back pain (M=4.26, SD=0.49) and male nurses' low back pain (M=4.32, SD=0.367); $t(108) = -.779$, $p = 0.438$. These results also decode that manual handling practices among male and female nurses are not significantly affecting in low back pain risks

Table 3: Independent Sample T-test on nurses' Low Back Pain based on gender

Gender	N	Mean	Std. Deviation	T	Df	Sig
Female	62	4.26	.497	-.77	10	.438
	9				8	
Male	48	4.32	.367			

Note. $p < 0.05$

Table 4: Correlations between Age and Low Back Pain

	(r)	p-value
Age	-.176	.069

Note. $p < 0.05$

This study observes the relationship between Age and Low Back Pain among nurses in Bangladesh. To ascertain the correlation among the above mentioned variable, Pearson's Correlations (r), analysis was performed in this study.

From the Pearson Correlation conducted in the table 4, it is seen that work environment related factors ($r = -.176$) are negatively correlated with Low Back Pain and the relationship is not significant ($p = .069$; which is higher than 0.05). This finding also clarifies that gender has a negative non-significant impact on low back pain risk among nursing personnel in Z H Sikder Women's Medical College & Hospital. Moreover, To determine the relationship among having supporting staff while performing manual handling and low back pain among nurses, an independent sample t-test (table 6)) was accomplished, and the findings indicates there was no significant difference between nurses who have supporting staff ($M = 4.37$, $SD = 0.366$) and nurses who don't have supporting staff ($M = 4.24$, $SD = 0.476$); $t(106) = -1.547$, $p = 0.125$.

Table 5: Independent Sample T-test on nurses' Low Back Pain based on supporting staffs

Gende r	N	Mea n	Std. Deviation	T	Df
No	3	4.37	.366	1.54	10
	8			7	6
Yes	7	4.24	.476		
	0				

Note. $p < 0.05$

Table 6: Correlations between prolong standing and Low Back Pain

	(r)	p- value
Prolong standing	.015	.876

Note. $p < 0.05$

This study examines the relationship between prolong standing and Low Back Pain among nurses in Bangladesh. To identify the correlation among the above mentioned variable, Pearson's

Correlations (r), analysis was performed in this study.

From the Pearson Correlation conducted in the table 6, it is seen that prolong standing ($r = .015$) are positively correlated with Low Back Pain and the relationship is not significant ($p = .876$; which is higher the 0.05). This finding also clarifies that prolong standing hour has a non-significant positive impact on low back pain risk among nursing personnel in Z H Sikder Women's Medical College & Hospital.

Table 7: Correlations between Work environment-related factor and Low Back Pain

	(r)	p- value
Work environment-related factor	.460**	.000

Note. $p < 0.05$

This study examines the association concerning work environment related factors and Low Back Pain among nurses in Bangladesh. To identify the correlation among the above mentioned variable, Pearson's Correlations (r), analysis was performed in this study.

From the Pearson Correlation conducted in the table 4.17, it is seen that work environment related factors ($r = .460^{**}$) are moderately correlated with Low Back Pain and the relationship is significant ($p = .000$; which is less the 0.05). This finding also clarifies that work environment related factors has a significant positive impact on low back pain risk among nursing personnel in Z H Sikder Women's Medical College & Hospital.

Table 8: Correlations between occupation related factors and Low Back Pain

	(r)	p- value
Occupation-related factor	.480**	.000

Note. $p < 0.05$

This research question four aims to examine the association concerning the occupation related factors and Low Back Pain among nursing personnel in Bangladeshi hospital. To identify the correlation among the above mentioned variable, Pearson's Correlations (r), analysis was implemented in this study. From the table 4.18, it is ascertaining that occupation related factors ($r = .480^{**}$) are moderately correlated with Low Back Pain and the relationship is significant ($p = .000$; which is less the 0.05). If the p-value is less than 0.05, reject the null hypothesis that there's no difference between the means and conclude that a significant difference does exist. "If the p-value is larger than 0.05, we cannot conclude that a significant difference exists" (Hair et al. 2014). This finding of this study also explains that occupation related factors have a significant impact on low back pain risk among nursing personnel in Z H Sikder Women's Medical College & Hospital.

Discussion

The findings of this study show that most of the nurses' demographic data variables (gender, age, designation, length of service, position at this hospital, working hours, manual lifting, supporting staff,

prolong standing hours, working condition) have non- significant relationship with Low Back Pain. These outcomes corresponded with [AlShayhan and Saadeddin \(2018\)](#) and [Suliman \(2018\)](#) where they disclosed that most of the nurses ' fewer sleep times were strongly related to the Low Back Pain issue. These observations are comparable to the conclusions of other research in Southeast Asia and in some under developing countries, particularly among nurses ([Goswami, 2016](#); [Gupta, 2015](#); [Panwar, 2018](#)). The finding also reveals a non- significant relationship with gender and low back pain. In other studies, similar results have been reported. Studies to assess the incidence and the causes of low back pain in African hospital staff showed that gender has not significantly associated to low back pain occurrence([Doualla et al., 2019](#); [Morris et al., 2018](#)). Another study done by [Gozani, Ferree, Moynihan, and Kong \(2019\)](#) suggests Low back pain in nurses at North Central Nigerian tertiary hospital found no difference on gender. The findings also suggest that age has a non- significant relationship with low back pain. Several studies ([Janapala et al., 2021](#); [Li et al., 2021](#); [Liu et al., 2021](#); [Skinner et al., 2021](#)) have investigated age and low back pain and concluded that low back pain has little dependences on age. It may occur to anybody at any stage. In this study, none of the work-related psychosocial factors was found to have a significant association to LBP. However, other research had shown a major risk factor in LBP for a higher age group ([Hartvigsen, 2018](#); [Hu, Kim, Ning, & Xu, 2018](#); [M. I. Ibrahim, Zubair, Yaacob, & Ahmad, 2019](#); [Mijena et al., 2020](#)). Factors of age may contribute to work results, leading to physical reactions such as increased lower back muscular tension causing LBP([Skinner et al., 2021](#)).

Many researches have also shown a relationship between the manual handling activities of old nurses, including raising and transportation of load, repeated bending of the trunk back and forward and rotational, and low back pain ([Goswami, 2016](#); [Hoy, 2010, 2012](#); [Petit, Rousseau, Huez, Mairiaux, & Roquelaure, 2016](#); [Skinner et al., 2021](#)) Specifically, workers over 40 years of age who have worked long term will have regularly done material handling and thus endured wear and tear accumulation of the back muscles. Muscle or ligament back injuries can occur, resulting in muscle strain and a feeling of LBP([Janapala et al., 2021](#)). This study also examines the relationship between having supporting staffs and low back pain among nurses in Bangladesh, where the findings suggest a non- significant relationship with Low Back Pain.

Moreover, the study examined the relationship between prolonged standing hours and low back pain among nurses in Bangladesh, which has been found that there is a non- significant relationship with low back pain. However, the effect of a seated rest on long standing caused low back pain has been observed by([Ng, Urquhart, Fitzgerald, Kirkovski, et al., 2021](#)). The two variables also shown that there is a clear association between. Another important objectives of this study is to determine that work environment related factors significant relationship with Low Back Pain among nurses in Z H Sikder Women's Medical College & Hospital. However, the findings of this study also support this, as the P- value is 0.000 which is >0.05. This finding is supported by [Sanjoy et al. \(2017\)](#), where they concluded that nurses are usually seen in hospitals

in Bangladesh with low back pain, not because of reasons pertaining to job climate, but often as a consequence of little accident.

In comparison, the nurses with low back pain complained more often that even in adverse environmental circumstances they had trouble getting a day off than those without low spinal pain. The nurses are more likely than manual handling operations to experience trouble with uneven surfaces, disproportionate bed height, uncooperative patients, and heavy weight([Verbeek et al., 2012](#)). [Gupta \(2015\)](#) indicated that nurses thought the need to lift patients in the manual care phase was lower than the need to drag, force and transform patients and to rotate the primary trunk. In a survey of nurses at 39 hospitals in 23 US states, however, the rates for musculoskeletal injuries in magnet-certified states that have a supportive working climate have been lower than in non-magnet hospitals in the case ([Michailidou& Marston, 2018](#)). However, the prevalence of musculoskeletal injuries was not statistically correlated with the number of nurse practitioners. Ses contradictory results demonstrate the need for an empirical and psychological framework to understand how the frequency and severity of back pain is caused by nursing practice.

Occupation-related factors are also associated with exposure to ergonomic stressors at work, environmental (physical), psychosocial and/or personal risk factors([Maher, 2017](#)). A large variety of workplace conditions have been established in several trials, linked to low back pain. Lifting and transporting large items [L. Chou, Ranger, Peiris, and Cicuttini \(2018\)](#) have been identified as a significant risk factor for LBP; a bad disposition, psychosocial demands for jobs and career frustration, frequent activity, repetitive workloads and bed making. Factors that projected occupational disorders include sleep issues, no daily physical fitness, fulfillment of working environments and society, period of jobs, strong load pulling and pressing, flexing and turning trunks, liquor intake and lack of rest([Ziaei et al., 2017](#)).

The findings also established whether the occupational variables in Z H Sikder Women's Medical College & Hospital have important connections with low back pain and the results of this analysis have also confirmed the association. In several recent research, the reports also show that the occurrence of chronic back pain in nursing in developed countries is higher owing to a shortage of resources and working conditions ([Ashina, Lipton, &Bendtsen, 2018](#); [Dzik, Skrobot, Flis, &Karnia, 2018](#); [Mekonnen, 2019](#); [Michailidou& Marston, 2018](#); [Sanjoy et al., 2017](#)). In Bangladesh, the strength of LBP was hardly regarded. The LBP occupational risk factors for healthcare providers should also be established, such that measures are taken to reduce LBP danger and ensure the protection of the work community([Sanjoy et al., 2017](#)).

In this analysis, occupational factors have been considered significantly related to LBP interventions. The main risk factors are the scarcity of support personnel, manual lifts and hours, although some demographic variables, such as age and parity, have been correlated with numerous LBP initiatives. These results are based on earlier observations ([Ibrahim, Weber, Courvoisier, &Genevay, 2020](#); [Johnstone, 2020](#); [Mijena et al., 2020](#); [Nolan, O'Sullivan, Newton, Singh, & Smith, 2020](#)). It is therefore necessary for nurse workers to be increased by considering the partnership between nurses and patients. Lack of help in a hospital may

contribute to increased physical workloads per nurse as well as longer working hours and a greater risk for LBP.

Conclusion

This research was focused on the connection between manual lifting and low back pain factors among health care professionals at Z H Sikder Women's Medical College & Hospital. The research was also planned to evaluate the incidence of low back pain among the nurses as well as their degree of manual control, frequency and severity. Finally, the research also sought to see whether variables including socioeconomic and physical activity levels are associated to low back pain. Several studies have shown that low back pain is a big concern in the world's health care industry, like Bangladesh. Moreover, some reports have shown that lack of experience is a big risk factor that lets the nurses suffer from low back pain. Moreover, the world's wellness body not only promotes physical exercise as a form of defense against low back problems and an individual's safe lifestyle. In Bangladesh, there has been no previous research on nurses, and as it is known to be at higher risk for accidents at work, early steps are needed in order to predict any of these risks. The environment of this research was one of Dhaka's private hospitals and the demographic of the sample comprised all skilled nurses.

The analysis of data was carried out using a self-administered questionnaire. In order to quantify numerical and administrative ratios of nurses, comprehensive figures were used. In order to assess the association between the low reverse and other demographic factors, the chi-square test was used and both experiments were performed at p deg.05 standard of value. Lastly, it was used to describe the connection between low pain in the back and other associated causes that had differential reactions. The research findings of the current study have shown that low back pain is strong among healthcare staff at ZH Sikder Women's

Medical College & Hospital.

The analyzes verified the usage or non-existence of the caregiver in ZH Sikder Women's Medical College & Hospital. Furthermore, this research has shown a substantial correlation with low back pain amongst nurses at the Z H Sikder Women's Medical College & hospital for demographic variables such as sleeping hours and working conditions. In addition, a study has taken place to ascertain if the factors associated with age and profession are correlated with low back pain in the nurses, while factors associated with job climate are not known.

The researcher noticed, however, that other considerations than demographic and manual handling practices might also theoretically assess low back pain in nurses. In the end, while the findings include important detail on the occurrence and risk factors of low back pain in the staff, the reports are restricted to particular patient patients. And it is not necessary to generalize widely.

Recommendations for Future Studies

Recommendations are given based on the study results.

1. Z H Sikder Women's Medical College & The hospital administration will use the research results to measure their nurses' likelihood of low back pain and to create strategies intended to reduce their prevalence., such as:
 - a. Education and skilled workers for patient movement and lifting.
 - b. Sensitivity and encouragement of the usage of secure handling technology at workshops and poster usage.
 - c. Development of a healthy and secure working atmosphere by psychosocial assistance for healthcare staff.
 - d. Finally, in recognition of the multiple beneficial results of physical exercise, hospital management must aim to encourage recreational opportunities amongst nurses and all other workers to ensure that safe and efficient workers are retained.
2. The Health Department in Bangladesh should make attempts to reduce low back pain by utilizing a global strategy in the nursing career as low back pain causes are multifactorial. preventive steps.
3. The results of this research cannot be applicable to the whole community but are not restricted to nurses alone. Therefore, the Ministry of Health can use findings of the study to improve preventative measures against occupational musculoskeletal disorders, especially low back pain for all health workers in Bangladesh.
4. The health care professionals can be accountable for themselves by bringing prevention steps and coping mechanisms for job-related conditions and low back pressure into consideration.
5. The researcher suggests to nurses that they adopt a balanced way of life with relation to physical activity that also leads to their emotional well-being based on literature that talks about physical exercise.
6. Finally, more studies must be undertaken to decide if the job environments of nurses in general enhance well, clean and favorable. Since the most workers who are prone to job-related accidents is reported, this will definitely mitigate the risks.

Acknowledgements

With thanks to the nurses, care assistants and other rehabilitation staff who contributed to this research. Thanks also to the patients who allowed an observer to be present during their care. Thanks also to my supervisors and Professors. I am also grateful to my family.

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