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RESEARCH ARTICLE

Prevalence of Low Back Pain Among Nurses in Sylhet District of Bangladesh

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Abstract

Low back pain (LBP) is a very common health problem worldwide and a major cause of disability - affecting performance at work and general well-being. LBP also is a common cause of morbidity in healthcare providers because of the nature of the work. A nurse is usually the first person a patient interacts with. Nurses play a dynamic and crucial role in healthcare. Nurses are among the occupational groups within the health service that are vulnerable to low back pain. This study was conducted to find out the prevalence of low back pain among the nurses working in Government and PrivateMedical College Hospitals in Sylhet, Bangladesh. The study type was cross-sectional survey. A total 753 participants formed the survey sample, chosen for the study. Data were collected by using the standardized Nordic Musculoskeletal Questionnaire (NMQ) and the nurses who reported LBP last for 12 months was selected for the study. After screening by NMQ, low back pain intensity was measured by using the standardized Visual Analogue Scale (VAS). Then the nurses were given the Oswestry Disability Index to measure the disability levels due to low back pain. Mean age of the respondents was 29.18+4.12 years. Female was triple fold (77%) than male (23%). About 92.40% nurses did not carry out normal activities such as job, housework, hobbies because of this trouble in lower back. About 55.8% had low back pain whereas 44.20% did not have. Minimal, moderate, severe disability and crippled were 66.0%, 31.0%, 2.0% and 1.0% respectively and no bed-bound nurse was found. Statistically significant association was found between LBP and nutritional status of the respondents ($p=0.03<0.05$).

Keywords: Prevalence, Low Back Pain, Disability, Nurses.

1. Introduction

Low back pain (LBP) is identified as the most prevalent, costly and disabling health conditions, preventive interventions should be implemented among working population to reduce the rate of incidence of LBP.[1] Physical factors and poor social relation at work are the factors predisposing to increased risk of LBP[2] and psychosocial cognitive factors play a main role as LBP progresses to disability.[3] Multifaceted interventions comprising participatory ergonomics, physical training and cognitive-behavioral training (CBT) have shown a positive effects for prevention of

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LBP in the working population.[4] Nursing is a high risk group profession with prevalence of low back pa\in LBP. Nursing literature shows that efforts have been done to try and reduce the problem of work-related low back pain while moving and handling, by training and the provision of handling aids. Documents indicate that global 1-year prevalence of LBP in workers, office workers, and health-care workers was 25%, 18%, and 58%, respectively. In addition to this knowledge of the prevalence of LBP among different jobs and their risk factors is critical. Finally whole prevalence of LBP was 40% in females and 39% in males.5 So from this statistics we can assume that nurses are at increasing risk of developing low back pain due to their job stress. Actually nurses are the constant and intimate health care provider. Without nurse a hospital or clinic cannot imagine. From emergency to ICU/ CCU nurses are playing vital role for betterment of patients. Absenteeism of nurses brings odd situation in hospital setting.

Although several authors have reported the prevalence of LBP among nurses in the developed populations, however, data on prevalence of LBP in nursing professionals are limited in Bangladesh for referencing. Even we don't know about their physical health status particularly low back pain which is considered burden of distress and hampers quality of their life. In the present study, we aim to find out prevalence of LBP and estimate the disability level among nurses as well as its divergence among nursing jobs in Sylhet, Bangladesh.

2. Methods

This was cross-sectional survey study. This study focuses prevalence of low back pain among nurses at a single point in a specified time. Considering time period and resource availability, cross-sectional analytical study design was the most feasible for this study. Apart from socio-economic condition, working environment and life style pattern of study population, information on various factors that affect the muscles, ligaments and bones were also obtained in a cross-cut way. This study was conducted among nurses working in Multi-specialty government and non-government medical colleges and hospitals in Sylhet, Bangladesh.

This area was conveniently selected for data collection and to get adequate sample of the study population. This study was carried out among nurses engage in medical colleges and hospitals. This may force them to adopt different working conditions, which is reflected through potential differences in musculoskeletal health condition. This situation provides an excellent opportunity to study how these different working conditions affect lower back. Non-probability convenient sampling technique was used. Participants were selected conveniently from Government and Non-Government medical colleges and hospitals in Sylhet, Bangladesh. All participants were given university approved consent form (Appendix 2a). In addition, the research process was explained in full. After receipt of informed signed consent form Nordic Musculoskeletal Questionnaire was given all participant and the nurses who reported LBP for the last 12 months were included. NMQ consists of questions referring to nine body mass.

These are 5 upper segments (shoulders, elbows, wrists, hands and thumbs), 5 lower limb segments and 3 trunk segments. NMQ identifies period prevalence of pain in different anatomical areas and the grades of severity. All answers are in the form of yes/no response. After completing screening by NMQ, low back pain intensity was measured using the standardized visual analogue scale. A visual analogue scale is a measuring instrument, ten centimeters straight horizontal length anchored by "no pain" (score of 0) and 'pain as a bad as it could be' or 'worst and imaginable pain' (score of 10).

After completing the VAS, then the nurses were given the Oswestry disability index (ODI) to measure the disability levels due to low back pain. ODI is the self-completed questionnaire contains ten topics concerning intensity of pain, lifting, ability to care for oneself, ability to walk, ability to sit, sexual function, ability to stand, social life, sleep quality and ability to travel. Each topic category is followed by 6 statements describing different potential scenarios in the patient's life relating to the topic. The patient then checks the statement which most closely resembles their situation. Each question is scored on a scale 0-5 with the first statement being and indicating least amount of disability and last statement is scored 5 indicating most severe disability. The scores for all questions answered are summed, and then multiplied by two to the maximum disability possible. If the test scores are 0% - 20%, 21% - 40%, 41%-60%, 61% - 80% and 81% - 100%, these patients are identified as mild, moderate, severe disability, crippled and bed-bound respectively. Participants were free to withdraw their participation without prejudice.

3. Results

Table 1. *Age group distribution of the respondents (n=753)*

Age group	Frequency	Percentage
Mean±SD	29.18±4.12	
25-30	559	74.2
31-35	118	15.7
36-40	76	10.1
Total	753	100.0

Above table shows that average age of the respondents was 29.18±4.12 years. Most of the study subjects (74.2%) belonged to 25-30 years followed by 15.7% from 31-35 years and 10.1% from 36-40 years respectively.

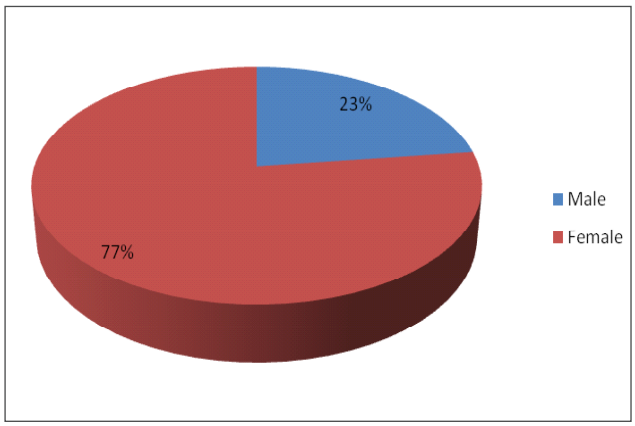

Figure 1. *Gender distribution (n=753)*

The above pie chart represents the distribution of gender of the participants where females were triple fold (77%) than males (23%).

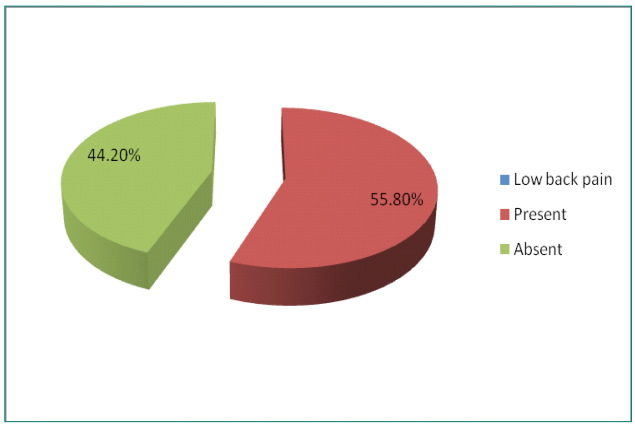

Figure 2. *Prevalence of low back pain (n=753)*

The above pie chart shows that among the participants about 55.8% nurses have low back pain whereas 44.20% did not have.

Table 2. *Distribution of years of engaging present work (n=753)*

Years	Frequency	Percentage
Mean±SD	4.42±4.02	
≤5	541	71.8
6-10	134	17.8
≥11	78	10.4
Minimum	1	
Maximum	17	
Total	753	100.00

Above table shows that average years of engaging in present work was 4.42±4.02 years. About 72% of the nurses engaged their present work from last five years followed by 17.8% and 10.4% from 6-10 years and ≥11 years respectively.

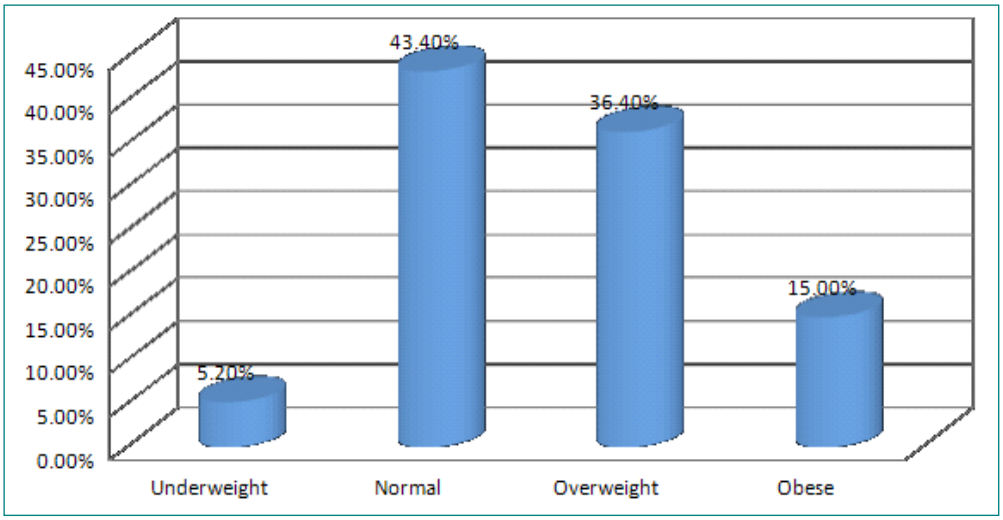

Figure 3. *Nutritional status of the respondents (n=753)*

This above bar chart producing a scenario of weight distribution of participants where less than half of the respondent were having normal weight (43.40%), more than one third (36.40%) of the respondent were overweight, 15% participants were obese and 5.20% were underweight.

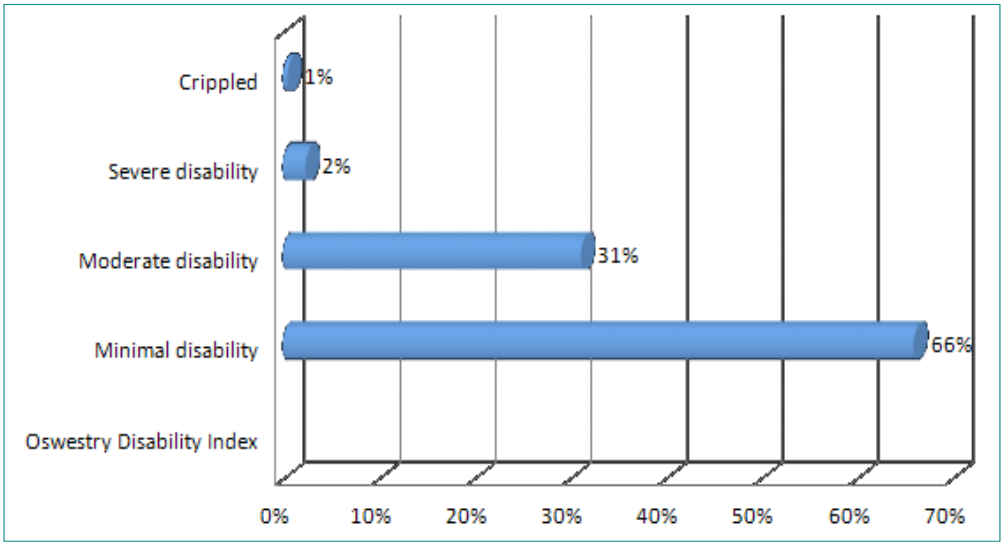

Figure 4. *Oswestry Disability Index (n=420)*

This Oswestory disability index figure shows the distribution of severity of disability where Minimal, moderate, severe disability and crippled were 66.0%, 31.0%, 2.0% and 1.0%.

Table 3. *Association between low back pain and nutritional status*

Nutritional status	Low back pain		Total	χ2	p value
	Present	Absent			
	n(%)	n(%)			
Underweight	28(3.7)	11(1.5)	39(5.2)	8.465	0.037
Normal	166(22.0)	161(21.4)	327(43.4)		
Overweight	160(21.2)	114(15.1)	274(36.4)		
Obese	66(8.8)	47(6.2)	113(15.0)		
Total	420(55.8)	333(44.2)	753(100)		

Statistically significant association was found between low back pain and nutritional status of the respondents ($p=0.037<0.05$). In the above table normal and overweight samples are more affected than obese group.

Table. 4 *Association between Oswestry disability index and nutritional status*

Nutritional status	Oswestry disability index				Total	χ2	p value
	Minimal	Moderate	Severe	Crippled			
	n(%)	n(%)	n(%)	n(%)			
Underweight	18(4.3)	9(2.1)	1(0.2)	0(0.0)	28(6.7)	5.313	0.806
Normal	115(27.4)	44(10.5)	6(1.4)	1(0.2)	166(39.5)		
Overweight	102(24.3)	55(13.1)	2(0.5)	1(0.2)	160(38.1)		
Obese	42(10.0)	23(5.5)	1(0.2)	0(0.0)	66(15.7)		
Total	277(66.0)	131(31.2)	10(2.4)	2(0.5)	420(100)		

Statistically no significant association was found between Oswestry disability index and nutritional status (p=0.806>0.05).

4. Discussion

Low back pain (LBP) is one of the most serious health problem of tremendous medical and socioeconomic dimension and a major cause of disability.[6] Low back pain can be defined as a pain localized between the 12th rib and the interior gluteal folds, with or without leg pain.[7] Nursing profession includes the promotion of health, prevention of illness, and the care of ill, disabled and dying people.[7] They are integral part of health care delivery system. Nurses are known to be a high-risk group for occupational low back pain.[6,7]

The aim of the study was to find out the prevalence of low back pain (LBP) among nursing professionals in Sylhet, Bangladesh and estimation of LBP and disability levels among nursing professionals who reports of low back pain. The study was cross-sectional survey type. Cross-sectional studies are first line study to find out the prevalence and understanding the burden of any musculoskeletal disorder. Low back pain is global concern now. Health care professionals particularly nurses do not escape from musculoskeletal problem. Low back pain, ranked as second among the diseases causing workforce loss in developed countries, is the most important factor affecting the production loss.

Occupational low back pain developed as a result of exposure to factors such as heavy lifting, working by bending forwards, using the waist and body in wrong positions, and improper working conditions is a common cause of injury. It is considered that the low back pain is more frequent today as a result of decreased body movements despite the spread of technology. Because of this, research on low back pain frequency and risk factors has an important place in preventing low back pain. Hospital employees encounter more occupational health problems than other professionals, and the most common of them is low back pain. Almost all of the nurses had trouble such as ache/pain/discomfort/numbness in lower back during last 12 months. About 55.8% nurses have low back pain whereas 44.20% did not have. Minimal, moderate, severe disability and crippled were 66.0%, 31.0%, 2.0% and 1.0% respectively and no bed-bound nurse was found. It has been previously reported that the lifetime prevalence of low back pain among nurses ranged between 70% and 80%, annual prevalence ranged between 15% and 45% and point prevalence was 30%.[8] Another study done by Ndagijimana, Claver P among the nurses of Rwanda, they used ODI and reported the study group of nurses suffered from mild to moderate disability due to WRLBP.[9]

In a survey that was conducted in Italy to investigate the musculoskeletal problems among Italian nurses, they found that the 12-months prevalence of LBP ranged from 33% to 86%.[10] Other studies reported 69% one-week prevalence for neck, shoulder, upper and LBP among Swedish nurses[11] and 61.2% back pain among nurses in Germany.[12] This observation is also in conformity with Sopajareeya C et al where 61.5% low back pain was found among the nurses working in a public hospital at Thailand.[13] A study done by Skela-Savic B et al found that the incidence of low back pain among nurses working at different Slovenian hospitals was very high (85.9%).[14]

Mohammadi M et al conducted a study and showed that overall prevalence of low back pain was 64% among nurses in Iranian hospitals.[15] Sameh M et al reported that one-year prevalence of low back pain among nurses working at Hamad General hospital, Doha, Qatar was 54%.[16] Emmanuel NM et al conducted a survey in a South Indian tertiary hospital and revealed low back pain prevailed in 53.4% among the working nurses.[17] Risk factors like smoking, high BMI, advancing age, female gender, inactivity, long standing time, and perceived stress were significantly associated with the presence of LBP worldwide and in Saudi Arabia.[18-23] But in our study, there is no association found between back pain and age group,

gender though statistically significant association was found between low back pain and nutritional status of the respondents. This is consistent with results by Landry et al.[24] which states that there is no association between LBP and common risk factors such as age, sex, professional experience, smoking and exercise. In order to avoid work-related LBP among HCPs, posture training, patient handling, ergonomics and back care education program should be introduced during their undergraduate study courses.

This would give them the opportunity to learn how to maintain their postures without putting too much effort on the body and use their forces efficiently and effectively. It has been recommended that frequent workshops and seminars should be organized. In a study performed on operating room nurses in Saudi Arabia there wasn't any relation determined between pain level and age, gender, smoking habit, BMI.[18] In the study by Wong et al. where they examined the risk factors among healthcare professionals working at different hospitals, there wasn't any meaningful relation determined between individual risk factors and low back pain.[25]

The reasons behind high prevalence of low back pain among nurses in Sylhet, Bangladesh may be due to socio-demographic factors, poor postural activities, poor work place design, lifestyle factors, work-related psychological strain, household work and lack of awareness about fitness exercise program which can be important predictors of LBP. Present study reveals high prevalence (55.78%) of low back pain among nursing professionals. Several studies proved that work-related health problem has become vital occupational health problem and is a factor of great concern.

There is an immediate need for the health policymakers or respected authorities to collaborate and provide nurses with necessary education about low back pain prevention and management and develop personal awareness and improve psychological health in their work place as well as make necessary modification to their work station in order to create an ergonomically appropriate environment for their practice.

5. Conclusion

Lower Back Pain can generally affect many people at some point in their lives. The mechanical hazards in the hospitals include manual lifting of patients, objects and equipment can cause nurses to be regularly affected by LBP. This epidemiological study showed high prevalence of LBP (55.8%) among nurses working in Sylhet. Almost all of the nurses did not carry out normal activities such as job, housework, hobbies because of this trouble in lower back. Minimal, moderate, severe disability and crippled were 66.0%, 31.0%, 2% and 1% respectively and no bed-bound nurse was found. Statistically significant association was found between low back pain and nutritional status of the respondents.

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