PREVALENCE OF LOW BACK PAIN AMONG THE NURSES

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We the undersigned certify that we have carefully read and recommended to the Faculty of Medicine, University of Dhaka, for the acceptance of this dissertation entitled

PREVALENCE OF LOW BACK PAIN AMONG THE NURSES

Submitted by **H M Harun-Ar-Rashid**, for partial fulfillment of the requirements for the degree of Bachelor of Science in Physiotherapy (B. Sc. PT).

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Declaration

I declare that the work presented here is my own. All sources used have been cited appropriately. Any mistakes or inaccuracies are my own. I also declare that for any publication, presentation or dissemination of information of the study. I would be bound to take written consent of my supervisor.

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Contents

Acknowledgement

Acronyms

ADL   Activity of Daily Living

BHPI   Bangladesh Health Professions Institute.

CRP   Center for the Rehabilitation of the Paralysed.

LBP   Low Back Pain

MS   Musculoskeletal

PT   Physiotherapy

SPSS   Statistical Package for the Social Sciences

USA   United States of America

VAS   Visual Analogue Scale

WHO   World Health Organization

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Abstract

Purpose: To identify the prevalence of low back pain among the nurses. *Objectives:* To find out the number of nurses affected by LBP per hundred nurses, to measure the severity of pain by using VAS scale, to identify the distribution of pain, to know the duration of pain, to identify the behavior of pain, to explore the socio-demography of the affected group, to determine the most common factors that are responsible for developing LBP among the nurses, to identify the available treatment received by the LBP affected nurses. *Methodology:* The study design was cross-sectional. Total 100 samples were selected conveniently for this study from the three selected medical college and hospital like the Enam medical college and hospital, Gonoshaystho medical college and hospital, and Centre for the rehabilitation of the paralyzed (CRP)selected area of Savar. Data was collected by using mixed type of questionnaire. Descriptive statistic was used for data analysis which focused through table, pie chart and bar chart. *Results:* The finding of the study was that the 66% nurses suffered from LBP. Most of them had been suffered from mild to moderate LBP with 2% had radiation to leg and 31% suffered from LBP for greater than 1 years, 21% suffered from 1-6 months, and <1 month of duration were suffered about 11% participants. 24% % nurses took treatment for their LBP among this only 7% took medication and physiotherapy treatment. *Conclusion:* The investigator could conclude from this study that more than half nurses were suffering from LBP. This result of this study also provided background information about LBP that may be useful in prevention and treatment of LBP, thereby reducing its prevalence.

CHAPTER- I:	INTRODUCTION

1.1 Background

Pain is an unpleasant emotional state felt in the mind but identifiable as arising in a part of the body. In other words, it is a subjective sensation. Pain is a defense mechanism designed to make the subject protect an injured part from further damage (Malcom, 1987). Back pain (also known as "dorsopathy") is pain felt in the human back that may come from the muscles, nerves, bones, joints or other structures in the spine. The pain may constant or intermittent, stay in one place or refer or radiate to other areas. It may be a dull ache, or a sharp or burning sensation.Low back pain (LBP), perhaps more accurately called lumbago or lumbo sacral pain, occurs below the 12th rib and above the gluteal folds (Owoeye, 1999, & Waheed, 2003).

Low back pain is a well recognized cause of morbidity in the industrialized world, where studies Picavet et al. (1999) have reported that the occurrence of LBP in general population and occupational settings (Rotgoltz et al., 1992), Work related musculoskeletal disorders, and in particular low back pain (LBP), play a major health and socioeconomic problem in modern society. Charoenchai et al. (2006) suggested that the Low back pain (LBP) is one of the most common symptoms experienced by people throughout the world and according to WHO (2003) LBP is responsible for a major portion of people staying away from work or visiting a medical practitioner. It is estimated that 70 to 80% of the world's population has at least one episode of back pain in their lifetime. This condition may cause a decrease in the quality of life of individuals, as well as deterioration in physical activity. Generally, incidents of back pain most commonly occur in between ages 25 and 50 years (Charoenchai et al., 2006). LBP has been referred as a 20th century disaster (Sparkes, 2005) and now a days it become an universal problem. In the United States disabling low back pain episodes increased 26%from 1974 to 1978, while the population increased only 7% (Pope, 1989). LBP is also very costly: in the U.S. total incremental direct health care costs attributable to low back pain were estimated at $26.3 billion in 1998 (Chou et al., 2007). It is also considered the second leading cause of office visits to primary care physicians in USA (Licciardone, 2008).LBP is a multi factorial disorder which involves most active individuals of the society and leads to many social and economic

problems. Many risk factors effect incidence and durability of LBP, some of which can be changeable and reversible (Sadigi et al., 2008). LBP is the most prevalent musculoskeletal condition and one the most common causes of disability in the developed nations. In developed countries such as the United States of America (USA) and Australia, LBP prevalence ranges from 26.4% to 79.2%. The lifetime prevalence of LBP in developed countries is reported to be up to 85%. LBP incurs billions of dollars in medical expenditures each year (Louw et al., 2007). Cassidy et al. reported that the prevalence of LBP among adult Canadians was 28.4% and 84.1% of Saskatchewan adults had experienced LBP at some point during their lifetime. In 1994, the estimated cost of back and spine disorders in Canada was $8.1 billion in Canadian dollars (Alkherayf, 2010). In the Netherlands, 15% of the total working-age population currently claims disability insurance for their LBP. Each year, low back pain accounts for 13% of all new cases. Nonetheless, there are indications that physical activities, i.e. manual material handling, bending, twisting (heavy load) and whole-body vibration, are possibly risk factors for acute LBP.

In another studies Biering-Sørensen et al. (1983) has been shown that 60–80% of the general population suffer from LBP at some time during their lives. Cunninham (2006) have explored that the nurses are among the occupational groups within the health service that are vulnerable to LBP. The life time prevalence Among nurses was found to be slightly higher, varying between 56% and 90% (Knibbe and Friele, 1996).Among nurses despite these high prevalence's the aetiology and the nature of LBP are not yet well understood.

Bernard (1997) in studies have been performed in various occupational settings, indicating a strong association between musculoskeletal disorders and work related factors. This was also found among nurses (Lagerström et al., 1995). The contribution of psychosocial factors and work pressure was also evident, but not as clear as has been shown for the physical factors (Thorbjörnsson et al., 1998). Burdorf & Sorock, (1997) have explored that the relation between work factors and LBP, in both nursing personnel and other occupational groups, They revealed that the Heavy lifting, frequent twisting and bending, whole body vibration, low social support at work, and low job satisfaction have been consistently associated with the risk of LBP. However, the intensity and the functional consequences of the pain were not reported. Hence, it

may be difficult to tell whether the identified predictors are predictors of nuisance or severe disease. Although Low back pain is common in the general population and affecting more than 60% of people at some time in their lives and often causing remarkable disability (Walsh et al., 1992). But it is particularly common in nurses. In a survey 10% of 1616 female nurses employed by a large (NHS) trust reported having lost more than a month in total from work because of back problems (Smedley et al., 1995).This high incidence is not only a burden on the many nurses who develop back pain but also a substantial cost to employing hospitals in lost efficiency, lost time, wasted training, and claims for industrial injuries. High levels of work-related low-back problems are found among nursing personnel, and, since nursing is primarily a female career and a large proportion of the female work force consists of nursing personnel, this is a prominent problem in work life.

The 1 -year prevalence of low-back problems among 1616 English nurses (mean age 38 years) was 45% (Smedley et al., 1995).which can be compared with the I-year prevalence rate of 35% for Danish women (mean age 41 years) in the general population (Biering-Siirensen, 1983). Smedley et al. (1995) showed that among the English nurses the life-time prevalence was 60%, and this figure could be compared with 45-64% for 1495 women from 8 areas in Great Britain in all age ranges (20-59 years). Despite the high prevalence of LBP among nurses, which has been consistently observed in the studies of Western countries but very little information is available regarding Bangladesh. With a rapidly aging population in Bangladesh, there is an increasing number of nursing staff in the long-term care sector. The objectives of this study are to investigate the prevalence of different measures of LBP among Bangladeshi nurses working in clinic and hospitals and to investigate the potential risk factors associated with eachof the LBP-related measure. These potential risk factors include individual characteristics, physical load, and psychosocial factors.

In this study, we assess and learn appropriate measures and technique about physical activities and load for each individual subject by using both on site observation of certain patient-handling tasks performed by nurses and self-reported data concerning perceived exertion at work.

1.2 Rationale

The aim of the study is to find out the prevalence of LBP among the nurses. In our country in which ergonomics the nurses are worked and which types of work are done by them, these make them more prone to develop different musculoskeletal problems; among these musculoskeletal problems LBP is the most common. Literature showed thatprolong static posture like stooping, bending, sitting, standing, as well as prolong squatting proposed to be associated with LBP. Besides these regular heavy weight lifting and heavy physical work to moderate physical activity is seems to be associated with LBP, in our country these work are done by the nurses regularly as their clinical practices, specially the nurses who are worked at the central hospitals in urban area, they need to carry their patients, sometimes need to lifting and transferring of medical equipment, and any kind of heavy objects. so the nurses are the more venerable group in health sectors to develop LBP in our country. But this topic does not come into focus because most of the time they ignore this problem by considering the problem of her hospitals authors because they need to take care her patients which they consider as the main duty of their life. They only disclose the problem when it becomes unbearable to them and they cannot continue the work anymore. Even they do not get proper treatment in case low socio-economical condition, and lack of knowledge about their appropriate treatment sector to manage LBP, But most of this LBP can be prevented or even curable only by following some ergonomical advice during their practices and ADLs. By considering the problems of the nurses, investigator is interested in these topics to focus the LBP problems among the nurses. From this study investigator will able to identify the prevalence of LBP and the most common factors which are responsible for developing LBP which can helps to develop appropriate measures to prevent the LBP among the nurses. Nurses may provide proper guideline for every single risk which will be helpful for them. When the researcher collect the data he must introduce herself to the participants as the physiotherapist and her role in musculoskeletal sector, as a result, at least the participants of this study get the information about one of the sectors of physiotherapy thus the information about the physiotherapy profession is spread out and the investigator thinks that it also will be very helpfulinprofessional development of physiotherapy which is necessary for the current situation.

1.3 Research question

What is the Prevalence of Low back pain among the nurses at savar ?

1.4 Objectives

1.4.1 General objective

- To find out the prevalence of Low back pain among the nurses in 3 selected hospitals at Savar.

1.4.2 Specific objectives:

- To investigate how many nurses are experienced LBP.
- To find out more affected age group.
- To know the severity of symptom by using Visual Analog Scale.
- To explore the relationship between the LBP and socio-economic condition.
- To identify the notification of symptom.
- To evaluate the socio-demographic factors for such exposure group in relation to age, sex, occupation, and work place.

1.5 List of variables

Conceptual Framework

Independent variables	Dependent variable

Socio-demography	
Posture during activity	
Heavy weight lifting	
Work hours of participants	Low back pain
Longevity of practice	
TraumaticHistory of back	
Leisure time and activity	
Job satisfaction	
Marital status	

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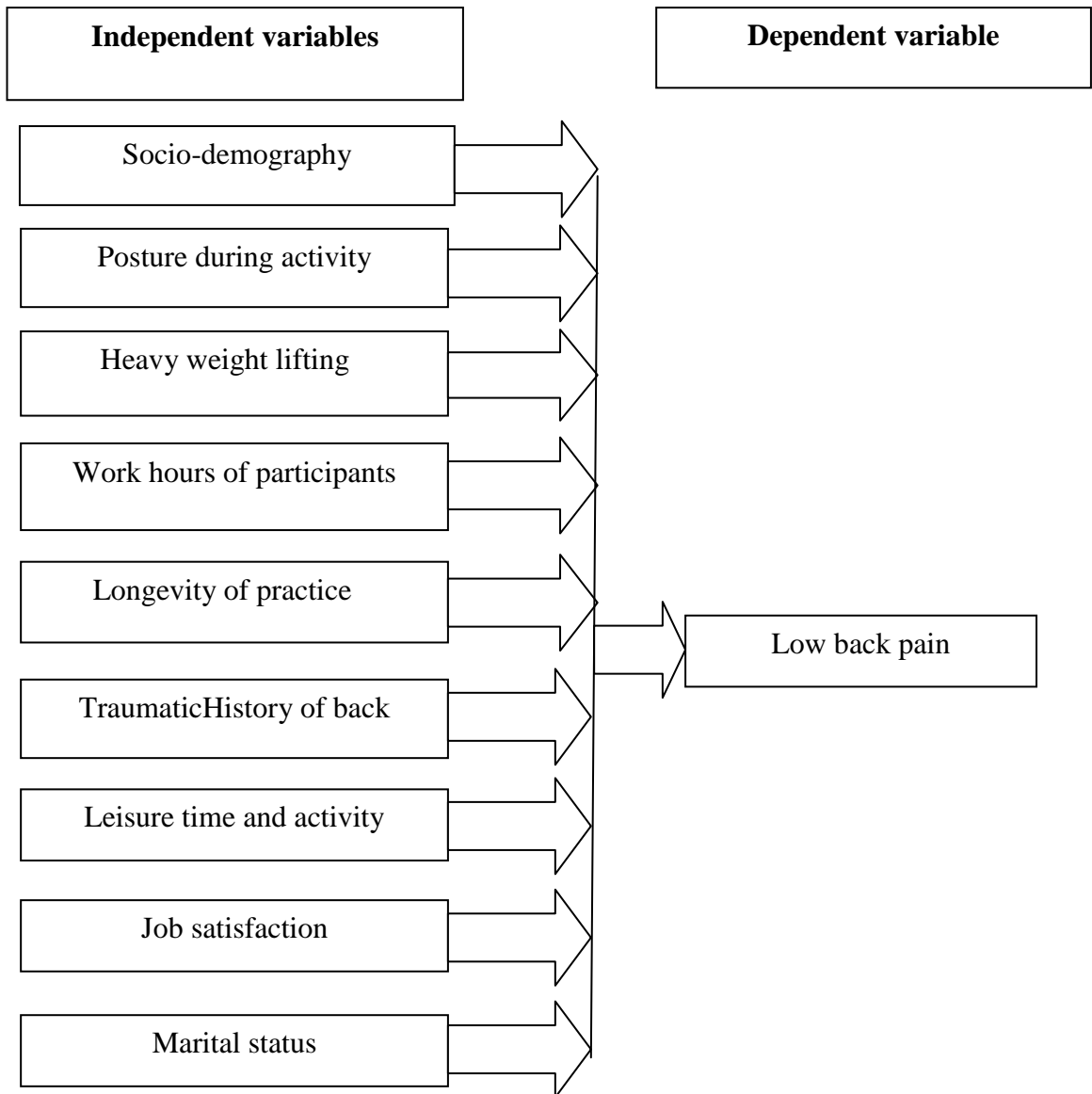
1.6 Operational definition

Prevalence

Prevalence is the total number of cases of a disease present in a given population at a specific time. The prevalence of LBP among the nurses was determined by the number of nurses affected by LBP per hundred nurses, in this study.

Nurses

Nurses means an unmarried or married woman, whose main occupation is patients caring for her work place (Hospital, clinic,or any rehabilitation centre),and managing health conditions of the patients and providing health services.

Low back pain

Low back pain means feeling of pain in the lumber region with or without radiation to the lower limb.

Heavy weight lifting

Carrying patients, lifting and transferring of medical equipment, and any kind of heavy objects.

Back trauma

Any kind of accident, trauma that directly affect the back.

CHAPTER- II:	LITERATURE REVIEW

An extensive search was made of the scientific literature published from 1988 to 1998 for studies on low-back problems among health personnel. The focus on the last 10 years was chosen because of the rapidly changing work situation at hospitals, nursing homes, and other types of nursing institutions.Low back pain is caused by multiple factors, generally categorized into physical, psychosocial and lifestyle factors (Habibi&Pourabdian, 2010). Psychosocial factors at work have been shown to play important roles in the development of low back pain (Mosrafa et al.,2008).They are perceived characteristics of the work environment that have an emotional connotation for workers and managers, and that can result in stress and strain (Houtman et al.,1994).

Sikiru&Hanifa (2010) Showed that the Back care ergonomics of all respondents (100%) with no LBP had previous knowledge of back care hygiene. 80 (26.67%) of nurses with LBP had knowledge of back care hygiene while 220 (73.33%) LBP respondents had no knowledge of back care hygiene. Severity of LBP One hundred and thirty 130(43.34%) nurses indicated that their pain was mild and that it did not disturb their daily activities; 116 (38.66%) reported that it was moderate and 54(18%) was severe. Out of the 116 nurses with moderate LBP, 53 reported that it prevented from going to work while the remaining 63 only reported restriction in daily activities. 54 (18%) thought it was severe, preventing them from going to work.

Sikiru & Hanifa (2010) Suggested that the Low back pain presently and within the last 12 months was reported by 300 respondents (73.53%). Of the 300 respondents reporting LBP, 96 (32%) were males and 204 (68%) were females. Where showed significant association (P<0.05) between gender (sex) and prevalence of LBP among nurses. Out of the reported LBP cases, those working in the Obstetric and Gynecology (O & G) department including labour room/ward showed high prevalence of LBP 80 (26.67%).The primary hypothesis, that jobs which are high in demands, low in control, and also low in social support at work carry the highest risk of illness, has been empirically successful in a number of chronic disease studies (Tirgar et al., 2005). Julia et al. (1997) showed that the Ergonomics risk factors are directly related

to musculoskeletal discomfort. Some ergonomics risk factors that are related to low back pain are: Heavy physical work, heavy or frequent manual operations, repeated rotation of the trunk, and prolonged sitting. These risk factors have been experimentally associated with the development of injuries in spinal tissues.Nurses are frequently required to undertake heavy lifting, often with a bent or twisted posture, and biomechanical investigations have confirmed that such tasks generate high spinal stress (Warming et al.,2009).AnderssonGunnar et al.(1999) found that university and hospital employees with occupations demanding high physical strains were absent from work, significantly more often due to low back pain than those with light physical work . Physical load like patient handling tasks have been associated with low back pain (Karasek et al., 1998). Studies in United Kingdom have demonstrated that the incidence of back pain among nurses is as great as that among industrial- back pain among manual workers. It has been found to be more frequently due to occupational factors in nurses than, in, for instance, a control group of teachers.Others have confirmed the work relatedness of occupational back pain (Harber et al., 1985).The effects on nurses and the service have also been indicated in this study which found that 29% of nurses take medication for low back pain, and 9% regularly miss work due to low back pain. Back pain among nurses is a major cause of days lost due to sickness, and this exacts huge amount on health service resources. A number of studies indicate that around 43% of subjects report recent back pain and up to 79% report episodes of work-related back pain during their career (Videman et al. 1984).

Videman et al. (1984) found that low back pain which lead to unfitness for daily tasks in the previous 5 years was reported by 18% of qualified nurses and 29% of nursing aides.Studies have found that the majority of nurses continued to work despite their discomfort. A survey indicated that nurses who missed work comprised only 13% of those reporting painful episodes lasting at least 2 days. Owen (1986) estimated that over one-third of nurses had episodes of back pain related to work, yet only 13% of these nurses had reported the episode. Cato et al. (1989) also found that 78%of nurses did not report back pain to management. both episodic and chronic back pain are infrequently reported to the nurses, employer, Harber et al. (1985).It has been estimated that around 3% of nurses change their jobs due to back pain (Harber et al.1985).These studies raised the issue of the cost of the service of losing experienced

staff. such costs included recruitment, retraining, compensation, and possible effect of low confidence in wards experiencing high staff turnover. With wastage such as this occurring,patients and taxpayers clearly pay a price, too. Nurse wastage figures combined with the sickness absence rates indicated the possible magnitude of the problem.Jenseil (1990) Have shown a relationship between patient lifting frequency and low-back problems. each stressful patient handling involves some risk of a back injury for the nurse. If the patient behaves as predicted and everything goes smoothly, the risk is minimal. However, if anything unusual happens, for example, the legs of the patient give way or the patient slides out of bed or off a chair, the risk of low-back problems for the nurse increases dramatically. It is a meta-analysis of 6 epidemiologic studies from 1985-1988 Jensen (Jenseil,1990) summarized that the prevalence of low-back problems among the nursing personnel who more frequently handled patients was about 3.7 times that of nursing personnel who infrequently handled patients.

A register study Smedley et al.(1997) showed an increased risk of operation for herniated lumbar disc alnong assistant nurses who worked in hospitals or nursing homes where heavy lifting occurred compared with the overall Danish female population. reported that the risk of low back problems was less if lifting devices were used than if not (Smedley et al.,1997). In another study, however, the use of lifting devices had no positive effect on low-back problems (Venniilg et al., 1987). nor was lifting patients in or out of baths with lift-up related to lower risks for low-back problem than lifting manually (Smedley et al.,1997). Cato et al. (1989) Studies have shown that "positioning a patient in bed" more often than other patient transfer procedures leads to low-back problems alnongnurses.Takala&Kukkonen (1987) noted that the work postures were uncomfortable also when lifting devices were used, and, in another study Vojtecky et al. (1987),found that whether devices were used or not was related to type of load, stress in the lifting situation, work experience, and the amount of training in the use of devices.Engels et al. (1996) Showed that as far as the equipment is concerned, beds which are not adjustable in height can be risk factors for low-back problems and for low-back stress (deLooze et al., 1994), as the height of the bed has important consequences on the postures and handling capacity of nurses (Lee &Chiou ,1994).Uncomfort work postures and standing great parts of a day were associated with a double risk of back problems along French nurses, as was also frequent lifting, pulling, and pushing (Estryn-Behar et al., 1990).

Ljungberg et al.(1989) have also found that lifting and pushing, as well as walking and standing great parts of a day, are of significance for low-back problems.However, in a study in which nurses from hospitals in Belgium and The Netherlands were studied, it was found that, in spite of the heavier work load among Dutch nurses, the life-time prevalence of low-back problems was higher along Belgian nurses. The work load was defined as time per day used-up on tiring patient-handling tasks (turning, lifting, helping, etc) (Bmtonet al., 1997).Low-back pain problems were more closely related to exposure than to work category according to Stobbeet a1.(1988) Each of the 3 work categories (registered practical nurses, nurses' aides, and attendants) were dichotomized into those who frequently lifted patients and those who infrequently lifted patients. In all 3 work categories, those who were exposed to frequent lifting had more low-back problems than the other exposure group. Heap (1987) showed that the greater amount of sick leave among nurses' aides could be explained by their more tiring work and that they, to a greater extent than registered nurses, worked in geriatric wards with many patient transfers. Work in orthopedic, geriatric, and rehabilitation wards with physically demanding nursing tasks has been regarded as a risk factor for low-back problems in studies (Venniilg et al., 1987).

Larese&Fiorito (1994) suggested that the staff density has been found to be an important factor in work organization and has been related to low-back problems. When the staff density is low, the nurses have to work alone frequently, and unassisted lifts were a risk factor for back injuries in a Canadian study (Larese et al., 1995). Work pressure and a need to slow down at work were related to an increased risk for low-back problems among Dutch nurses. Work disturbed by unseen events was also a risk factor (Engels et al., 1996).An insufficient number of staff can lead to work overload, which was seen in a studies to contribute to feelings of stress among nurses (Cato et al.,1989). Of nurses with low-back problems, Cato et a1. (1989) showed that 73% reported feeling overly stressed at work compared with those without low-back problems (53%). Some of the most important factors which contributed to work stress were a feeling of overload, emotional consume, and the perception of conflicting demands and trouble with management (Cato et al.,1989).Rydtn et al. (1989) reported that work on a day shift was a risk factor for low-back problems. This finding may be explained by the higher physical demands, especially in patient handling and nursing care during the days when lifting and

bending requirements are higher than during the evenings or nights. In another study, shift work versus day work was not a risk factor for low-back problems (Smedley et al., 1995). Working full-time during a week as compared with part-time was considered a risk factor in a studies (Fuortes et al.,1994), but not in others (Smedley et al., 1995).Harberet a1. (1985) Showed that there are no effect of training in patient handling on low-back health. However, inadequate training was reported by 52% of the back injured nurses as the cause of the injuries (Larese et at., 1995). There exists an international controversy concerning "proper" lifting techniques (Owen, 1986), and there is no proof of a particular technique leading to a decrease in low-back problems among nurses. The importance of compliance was seen in an Australian study in which the total weight lifted not in accordance with any of the recommended methods was the main risk factor for back problems. Factors contributing to choice of method were patient cooperation, occupational category, and number of nurses carrying out the lift (Lo et al., 1993)

Lagerstrom et al. (1995) showed that the Psychological demands, authority over decisions, skill utilization, and social support at work were related to low-back health. The relative risk of low-back problems was higher for those with high job strain as compared with those with low job strain. Job strain was defined as a combination of high work demands and limited possibilities to influence work (Josephson et al., 1997). In another study, institutional policy (ie, conflicts between own beliefs and those of the institution, lack of power and influence), work overload, and poor social relations were related to low-back problems among full-time nurses in wards with a high perceived ergonomic load. Moreover, responsibility was related to low-back problems for full-time work in wards with low perceived ergonomic load (Bru et al., 1996). There are, however, studies in which the psychosocial factors were not considered to be risk factors (Skovron et al., 1998).Ready et al.(1993) Suggested that the Job satisfaction predicted low-back health. The effect of this factor was evident when combined with earlier severe low-back problens and smoking (Ready et al., 1993) Attitudes towards health and also psychological disturbance predicted back pain among student nurses (Klaber et al., 1993). Dutch nurses had a heavier job load, but, in spite of this, they experienced higher work satisfaction, had more positive attitudes towards pain, work and activity, and used more positive coping strategies than Belgian nurses.The Dutch nurses reported a lower life-time prevalence of low-

back problems than the Belgian nurses (Bmton et al.,1997)It is evident that, in spite of different study designs, most research points to physical factors as contributing to low back problems, while the contribution of work organizational and psychosocial factors is not as clear.In spite of the focus on work-related factors in this review, the individual factors analyzed in some studies are also included. No conclusive relationships have been found between individual factors and low-back problems among nurses. Reviews of the general population or vocational groups have in general shown that low-back problems increase with age up to 50-60 years of age, after which there is a decline (Riihimaki, 1991). Hence high age is a risk factor mainly for women (Nisell et al., 1992), a finding which was also shown in a nursing studies (Lee &Chiou, 1994).but not in others (Lagcsstrom et al., 1995). Niedhammer et al. (1994) Showed that at the age 40-44 years the risk of lumbar pain was twice as high as for the group <35 years of age among French nurses.

Cigarette smoking as a risk factor for low-back problems also showed a contradictory outcome. Studies found a relation between smoking and low-back problems along nurses (Ready et al., 1993), while others did not.No conclusive relationships have been found between individual factors and low-back problems along nurses. However, a "history of back problems" seems unquestionably related to new episodes of low-back problemsAn understanding of the activities associated with back pain is necessary for the development of appropriate preventive strategies. The unique nature of the job is probably the major cause of the high prevalence of back pain among nurses. Many of the factors identified are postural in nature. Direct patient contact activities, particularly patient lifting and transferring, are most frequently mentioned as causes of occupational back pain (Harber et al.,1985). These two tasks accounted for 79% of low back pain among nurses.However,Theseargueof that nurses are socialized in nursing training with some set of beliefs which they retained throughout their professional career, such as: patient contact tasks cause back pain. To some extent, these beliefs might bias the understanding of actual injury experiences when recalling such activities related to back pain. Harber et al. (1985) explored that by an observational study on 63 nurses found that non patient contact actions occurred more frequently patient contact activities per shift, and that static actions were common. Such static action, especially in a non upright position, further increased biomechanical stress on the lower back.And in this studies have reported that back

pain in nurses might be related to factors other than direct patient care. These included carrying and pushing, previous back injury, headache, and frequent exercise.

3.1 Study design

The aim of this study was to find out the prevalence of LBP among the nurses. For this reason, the investigator choose a cross sectional study because the cross sectional study is the best way to determine prevalence. The cross sectional study is called "prevalence study" and this can also be used to identify the associations. The most important advantage of cross sectional study is it need not more time and also cheap. As there is no follow up, fewer resources are required to run the study. A cross-sectional study is a descriptive study which providing a "snapshot" of the frequency and characteristics of a disease in a population at a particular point in time.

3.2 Study site and area

The study sites were is selected the Enam medical college and hospital, Gonoshaystho medical college and hospital, and Centre for the rehabilitation of the paralyzed (CRP) for data collection. At first researcher developed a standard questionnaire and then select the nurses as sample for data collection.

3.3 Study population and sampling

A population refers to the members of a clearly defined set or class of people, objects or events that are the focus of the investigation. So all of nurses of Bangladesh who fulfill the inclusion and exclusion criteria of this study are the population of this study. But it was not possible to study the total population within the time of this study, so the investigator took only 100 nurses as sample who were selected in this study, the researcher choose the nurses in the selected Enam medical college and hospital, Gonoshaystho medical college hospital and Centre for the rehabilitation of the paralyzed (CRP) as population to carry out this study according to the inclusion and exclusion criteria. The investigator use the convenience sampling technique due to the time limitation and also for the small size of population and as it is the one of the easiest, cheapest and quicker method of sample selection.

3.4 Sample size

Sampling procedure for cross sectional study done by following equation-

$$n = \left\{ \frac{Z\left(1 - \frac{\alpha}{2}\right)}{d} \right\}^2 \times pq$$

Here,

$Z\left(1 - \frac{\alpha}{2}\right) = 1.96$

p= 0.5

q= 1-p

d= 0.05

So the investigator aimed to focus his study by 384 samples following the calculation above initially. But as the study was done as a part of fourth professional academic research project and there were some limitations, so the researcher had to limit with 100 cutting and finishing operators as sample.

3.5 Sampling technique

Sampling refers to the process of selecting the subjects/individual. The researcher will select the purposive/convenience sampling method to draw out the sample from the population.

3.6 Inclusion Criteria

- Nurses whose have no assistant for help in their work place
- Both registered, none registered and post graduate nurse are included.
- At least 1 year clinically services as a nurse

3.7 Exclusion Criteria

- Nurses suffering from serious pathological disease e.g. tumors, tuber sclerosis etc.
- Pregnant women
- Any history of obstetrical or gynecological surgery.
- Less than 1 year experienced nurses

3.8 Data collection tools

Were data collection tools are Questionnaire, Pen, Paper, File and VAS-Scale (visual analog scale)

3.9 Data analysis plan

Data were analized in Microsoft office Excel 2010 using SPSS 16 version software program.

3.10 Data collection

The participants completed a self-administered questionnaire at their workplace. The questionnaire was designed to collect information on whether LBP was present during the past 12 months. Information on individual characteristics (age, height, weight, marital state, level of education, exercise in leisure time), work conditions (duration of employment in current work, average working hours per day), perceived physical exertion, and psychosocial load at work was also collected.

3.11 Inform consent

Before conducting research with the respondents, it is necessary to gain consent from the subjects. For this study participants were selected conveniently for this study according to the inclusion and exclusion criteria and inform the study objective properly by using consent form. Participant and investigator signed in willingly into the consent form. By the consent form the participants were informed that they were completely free to decline answering any question during data collection and also free to withdraw their agreement and participation any time from this study. The participants were informed clearly that the confidentiality should be maintained strictly and information might be published in any presentations or writing but they will not be identified. And it is also ensure that the investigator will be available at any time to answer any additional questions in regard to the study.

3.12 Ethical consideration

It should be ensured by the investigator that it would maintain the ethical issue at all aspects of the study. Because it is the crucial part of the all form of research. At first to conduct the study, the ethical committee checked the proposal and granted the proposal then the investigator started the study. Permission was also taken from all the participants in the form of written consent during data collection. During the course of the study, investigator gave the consent form to the interested participant.They were informed that their participation was fully voluntary and they had the right to withdraw or discontinue from this study at any time without any hesitation or risk.Participants were also informed that confidentiality would be maintained and client codes were used to keep clients identity invisible. They were assured that taking part in this study would not cause any harm to them but the result of the study would be beneficial for them.

3.13 Limitations

There were a number of limitations and barriers in this research project which had affect the accuracy of the study, these are as follow:

- First of all, time of the study was very short which had a great deal of impact on the study. If enough time was available knowledge on the thesis could be extended.

- The samples were collected only from the selected area of Savar and the sample size was too small, so the result of the study could not be generalized to the whole population of nurses in Bangladesh.

- This study has provided for the first time data on the prevalence of LBP among the nurses in Bangladesh. No research has been done before on this topic. So there was little evidence to support the result of this project in the context in Bangladesh.

- A convenience sampling was used that was not reflecting the wider population under study. Prevalence was identified by a questionnaire, and the validity and reliability of thismethod may be questionable. However, a questionnaire might be the only feasible method of assessing in large populations.

- The research project was done by an undergraduate student and it was first research project for her. So the researcher had limited experience with techniques and strategies in terms of the practical aspects of research. As it was the first survey of the researcher so might be there were some mistakes that overlooked by the supervisor and the honorable teacher.

The aim of this study was to explore the prevalence of LBP among the nurses. Data were numerically coded and analyzed the data by using an SPSS 16.0 version software program and the result captured in Microsoft Excel. The investigator collected the descriptive data from the hospital and calculated as percentages and presented by using bar and pie chart and in table, for this study 1oo nurses were taken as a sample fromEnam medical college and hospital (60 participant) Gonoshaystho medical college and hospital (30 participant) and Centre for the rehabilitation of the paralyzed (CRP) (10 participant) area of savar were taken to explore the prevalence of LBP among the nurses.

Age Groups

Among the respondent participants who were suffering from LBP, the lowest age was 17 and highest age was 57 years. The frequencies of LBP among the different age group were: 17–27 years: 83%; 28–37 years: 9%; 38–47 years: 6%; 48-57 years: 2%. According to data view, the investigator could say that the frequency of LBP among the nurses was highest in between the 17-27 years. Among the participants the higher number of the participants were 23 and 24 years respectively and the numbers were 13 (13%). The number of ≤30 years were 87 (87%) and >30 were 13 (13%).

Age groups	Enam medical college and hospital	Gonoshaystho medical college and hospital	Centre for the rehabilitation of the paralyzed	Total Number (n)
	Number (%)	Number (%)	Number (%)	
17 – 27 Years	56 (93%)	25 (83%)	2(20%)	83
28 – 37Years	4 (7%)	2(7%)	3(30%)	9
38 – 47Years	0	2(7%)	4(40%)	6
48 – 57Years	0	1(3%)	1(10%)	2
Total	60 (100%)	30(100%)	10(100%)	100

Table No.1: Age of the participant

Severity of pain

Among the affected participants who were suffering from LBP, the severity of pain in VAS scale was in between 1-4 (mild pain) in 30% (n=30) nurses,in between 5-7 (moderate pain) in 23% (n=23) nurses and there were 13% (n=13) participant who had score in between 8-10 (severe pain) in VAS scale.

Pain	Severity in VAS scale			Percentage
	Mild pain (1-4)	Moderate pain (5-7)	Severe pain (8-10)	
Pain present	30%	23%	13%	66%
Pain absent				34%
Total				**100%**

Table No.2: Information about the severity of pain of the affected group

Distribution of pain

Among the affected participants who were suffering from LBP, 56% (n=56) participant had suffered from central pain and 8% (n=8) had suffered from radiated to buttock low back pain and radiated to leg about 2% (n=2).

Pain	Radiation	Percentage
Radiated to leg	Yes	2%
	No	98%
central	yes	56%
	No	44%
Radiated to buttock	yes	8%
	No	92%

Table No.3: Information about the distribution of pain of the affected group

Duration of pain

Among the affected participants who were suffering from LBP, 11% (n=11) nurses suffered from LBP for less than 1 months, 21% (n-21) nurses suffered from 1-6 months and 3% (n=3) nurses suffered from 7-12 month and 31% (n=31%) nurses suffered from LBP for more than one year of duration.

Pain	Duration of pain	Percentage
	<1 month	11%
Range of pain duration	1-6 month	21%
	7 - 12 month	3%
	>1 year	31%
Total		66%
No pain		34%

Table No.4: Information about the duration of pain of the affected group

Frequency of taking treatment

Among the affected participants who were suffering from LBP, 24% (n=24) participant took treatment and remaining 76% (n=76) participants did not take any treatment for their pain. Among participants who took treatment for their LBP, 15% (n= 15) participants took medication, 2% (n=2) participants took Physiotherapy, 7% (n=7) participants took both medication and physiotherapy treatment for their LBP.

Treatment take	Type of treatment	Percentage	Total (%)
Yes	Medication	15%	24%
	Physiotherapy	2%	
	Both	7%	
No			76%
Total			**100%**

Table No.5: Information about the available treatment taking by the affected group

Educational level of the affected group

Among the affected participants who were suffering from LBP, 50% (n=50) nurses were non registered, 49% (n=49) nurses were registered, and 1% (n=1) nurses were post graduated pass.

Educational level	Number (n)	Percentage
Non registered	50	50%
Registered	49	49%
Post graduated	1	1%
Total	**100**	**100%**

TableNo.6: The educational level of the affected group

Leisure time

Among the respondent participants who were suffering from LBP, the nurses passed their leisure time are describe as: Gardening: 2% (n=2); watching TV: 47% (n=47); reading book: 35% (n=35); others: 16% (n=16). According to data view, the investigator showed that getting leisure time did not have any effect on developing LBP; it was found that the nurses were more affected who were watch TV (47%) during leisure time and followed by who passed their time by reading books.

Leisure	Activity	Percentage
	Gardening	2%
	Watching TV	47%
Leisure periods	Reading book	35%
	Others	16%
Total		**100%**

Table No.7: Information about the leisure time and LBP

Periods of practice

Among the all respondent participantthe frequencies of LBP among the different participants and there time duration of practices were: 1–5 years: 71%; 6–10 years: 9%; >10 years: 20%; According to data view, the investigator could say that the frequency of LBP among the different participants and there time duration of practice among the nurses highest number was in between the 1-5 years. And the participants were at 71 (71%) and the lowest numbers were 6-10 years and the participants were at 9 (9%). Another number of participants were 20 (20%), and duration of practice was >10 years.

Period of practice	Periods	Percentage (%)
	1-5 years	71%
More than 1 year	6-10 years	9%
	>10 years	20%
Less than 1 year		0%
Total		**100%**

Table No.8: Periods of practice among the participants

Travelling affect of back pain among the affected participants

Among the all participants 42% (n=42) participant had been travelling affect on their back pain and remaining 58% (n=58) participants had not any travelling affect for their pain. Among participants who had been travelling affect on their back pain, 22% (n= 22) participant had been mild travelling affect on their back pain, 18% (n=18) participants had been moderate travelling affect on their back pain, 2% (n=2) participants had been severe travelling affect on their back pain.

Travelling affect	Severity			Total (%)
	Mildly	Moderately	Severely	
Yes	22%	18%	2%	42%
No				58%
Total				**100%**

TableNo.9: Travelling affect of back pain among the affected participants

Lifting affect of back pain among the affected participants

Among the all participants 48% (n=48) participant had been lifting affect for their back pain and remaining 52% (n=52) participants had not any lifting affect for their pain. Among participants who had been lifting affect on their back pain, 22% (n= 22) participant had been mild lifting affect on their back pain, 22% (n=22) participants had been moderate lifting affect on their back pain, 4% (n=4) participants had been severe liftingaffect on their back pain.

Lifting affect	Frequency (n)			Total (%)
	Mildly	Moderately	severely	
Yes	22	22	4	48%
No				52%
Total (n)				**100%**

Table No.10: lifting affect of back pain among the affected participants

Back pain progression among the affected participants

Among the all participants 40% (n=40) participant had affect on their back pain as day progression and remaining 60% (n=60) participants had no any affect on their back pain as day progression. Among participants who had affect on their back pain as day progression, 11% (n= 11) participant had been increasing their back pain, 22% (n=22) participants had been decreasing their back pain, and 7% (n=7) participants had been fluctuating change on their back pain as day progression.

Pain progression	Type of progression	Percentage (100)	Total (%)
	increase	11%	
Change	decrease	22%	40%
	fluctuating	7%	
No change			60%
Total			**100%**

Table No.11: Back pain progression among the affected participants

Prevalence of LBP

Among all of the (100) participants 66% (n=66) participants had been suffering from LBP and 34% (n=34) participants had not been suffering from LBP.
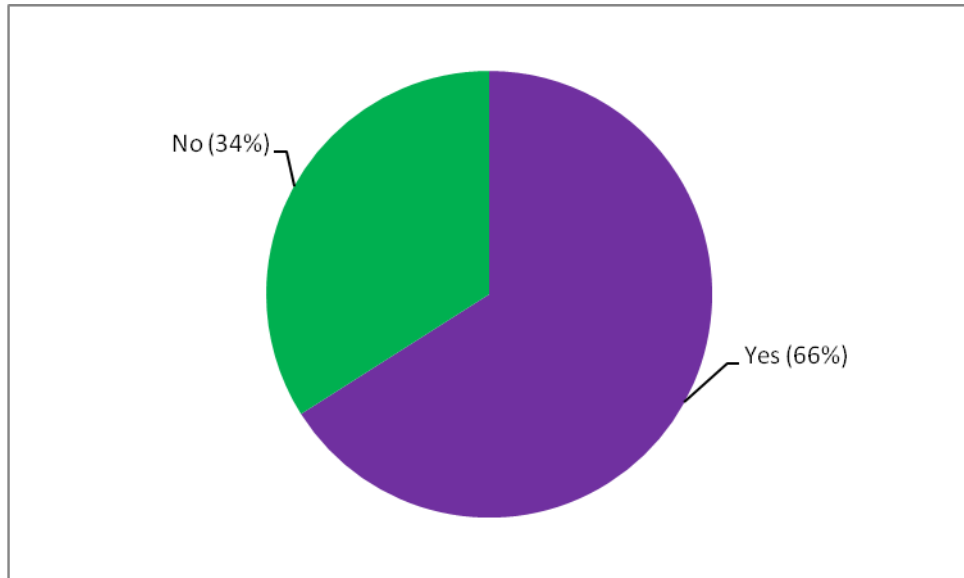

Figure No.1: The frequency of LBP per hundred nurses

Posture that makes pain relief during practices

Among all participants 66% (n=66) were affected and who were suffering from LBP and their pain were relief due to maintained following posture during practice, 57% (n=57) participants maintained lying, 4% (n=4) participants maintained sitting and 3% (n=3) participants maintained walking and another 2% (n=2) participants maintained bending posture most of the time during the practice. So the investigator found from this study that the participants who maintained the lying posture after practicing they had chance to relief of LBP, and followed by sitting and then walking position.
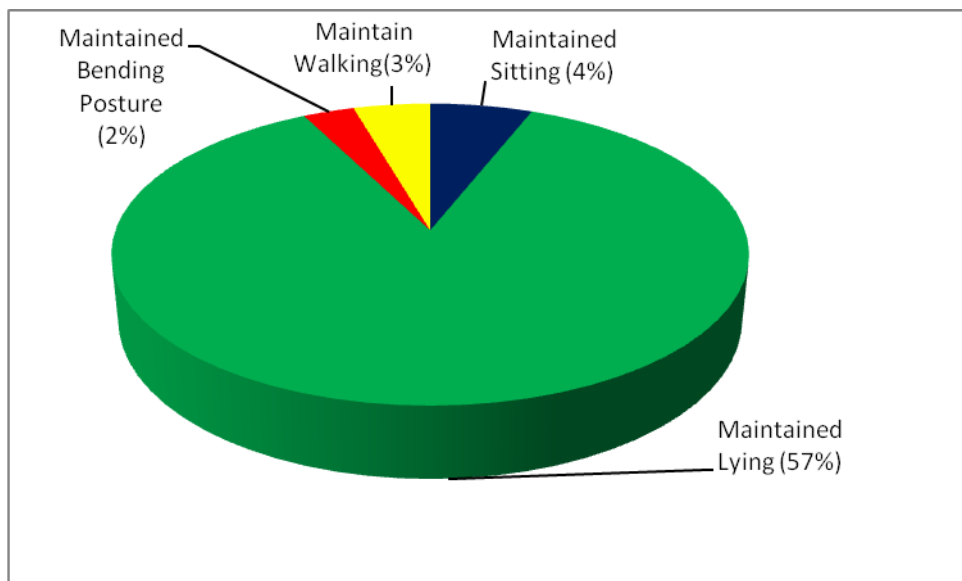
Figure No.2: Posture that makes pain relief during practices

History of previous back trauma

Among the respondent participants who were suffering from LBP, 21% (n=21) participants had positive previous traumatic history and 79% (n=79) participants had negative previous traumatic history on back. So according to data view, previous history of trauma had no any effect on LBP.

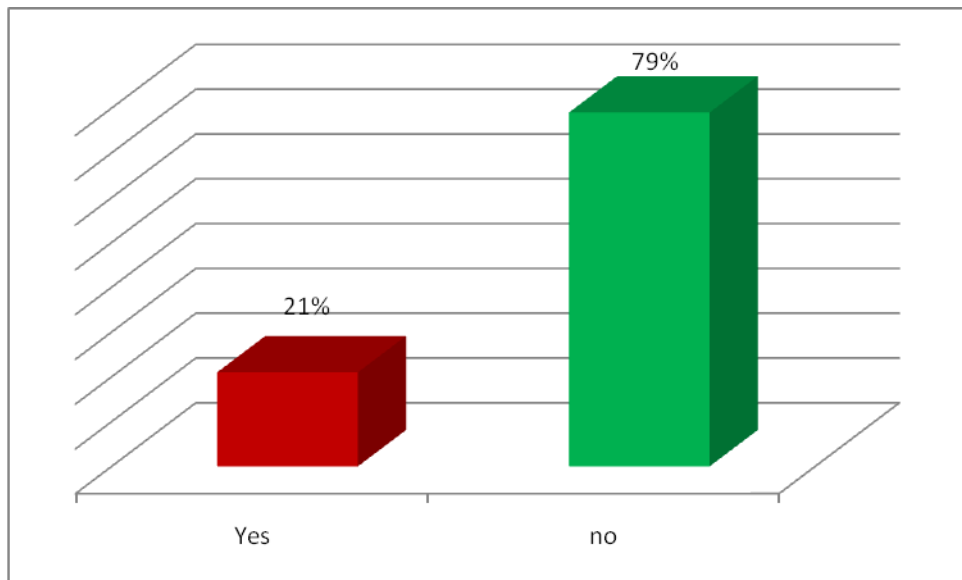
Figure No.3: The history of back trauma and LBP

Marital status

Among the affected participants who were suffering from LBP, 42% (n=42) were married; 58% (n=58) were unmarried.
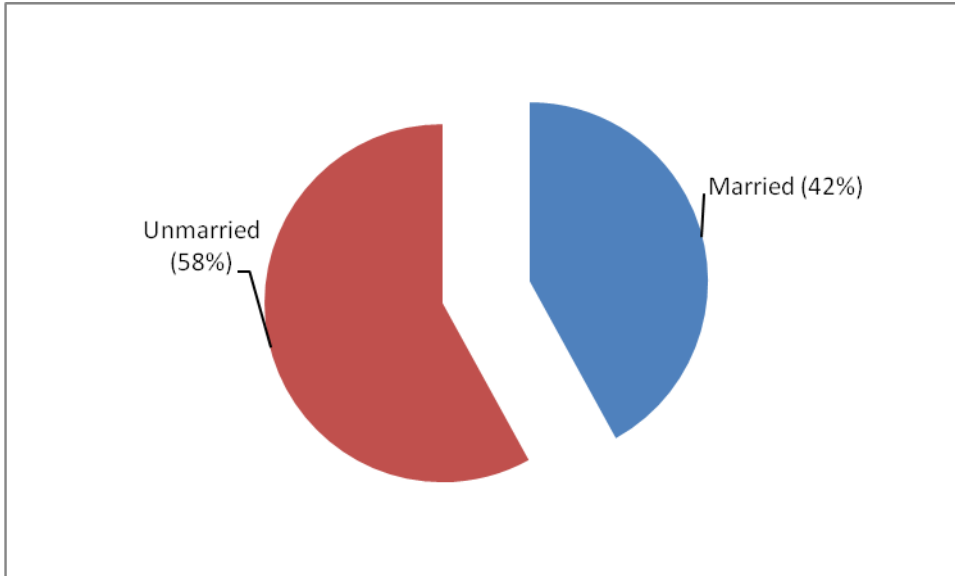
Figure No.4: The marital status of the affected group

Posture during practice

Among the affected participants who were suffering from LBP, 22% (n=22) participants maintained sitting, 70% (n=70) participants maintained standing and 8% (n=8) participants maintained bending posture most of the time during the practice. So the investigator found from this study that the participants who maintained the long time standing had the height frequency of LBP followed by sitting and bending position.
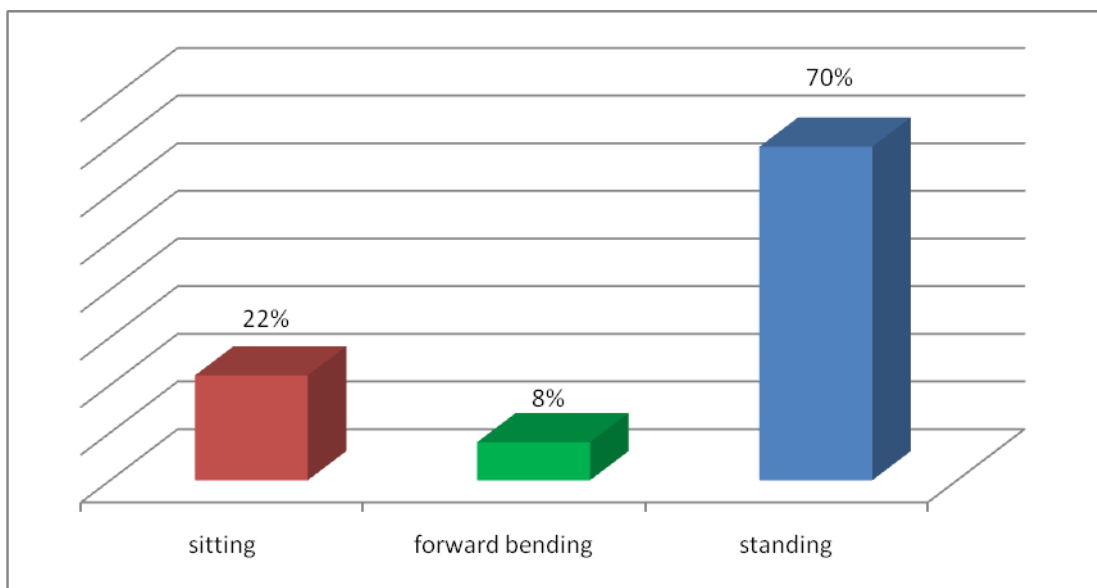
Figure No.5: Posture during practice

Posture that makes pain worse during practice

Among the all participants 66% (n=66) were affected and who were suffering from LBP and their pain were worse due to maintained following posture during practice, 38% (n=38) participants maintained standing, 16% (n=16) participants maintained bending and 6% (n=6) participants maintained sitting and another 6% (n=6) participants maintained walking posture most of the time during the practice. So the investigator found from this study that the participants who maintained the long time standing posture during practice there had the height frequency of pain worse of LBP, and followed by bending and sitting position.
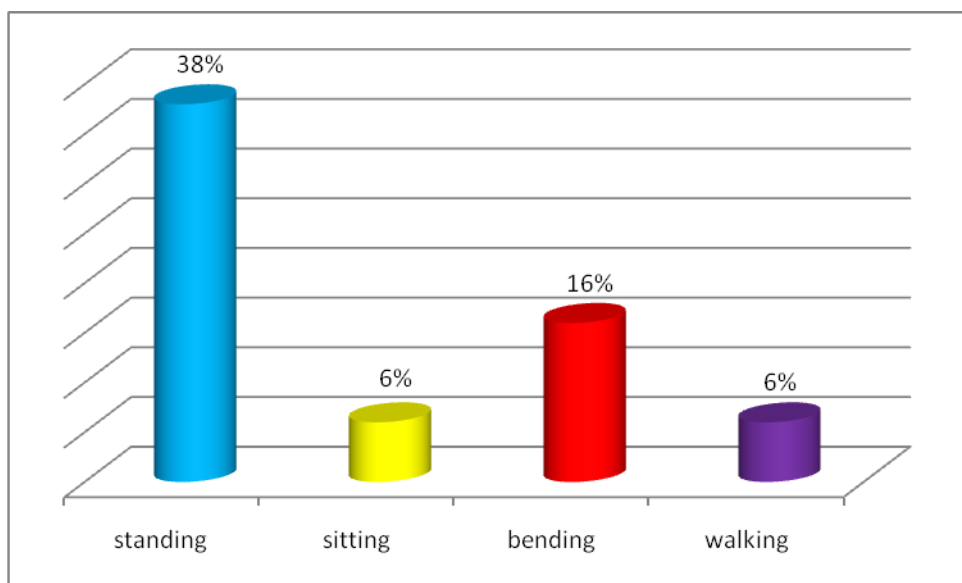
Figure No.6: Posture that makes pain worse during practice

Pain that affected the ADL among participants

Among the all participants 49%(n=49) participants were affected and where the pain affect their ADL,the frequencies of LBP among the different participants and they were suffering from affectation were 31% (n=31) participant had suffered from mild pain and 16% (n=16) had suffered from moderate pain and 2%(n=2) participant had suffered from severe low back pain.
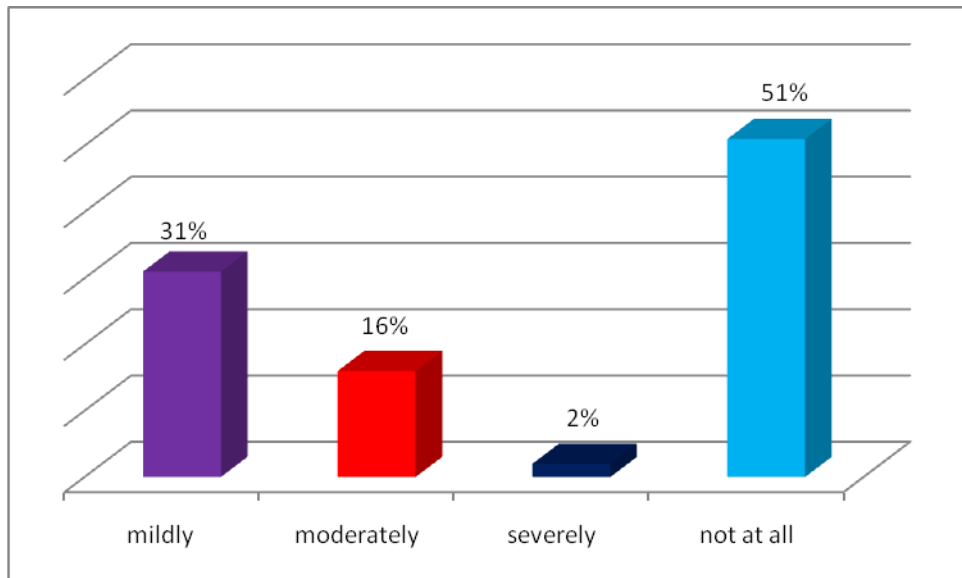
Figure No.7: Range of Pain that affects on ADL among participants

Work hours of the participants

Among all of the (100) participants 53% (n=53) participants had been worked at 8 hours, 11%(n=11) had been worked at >10 hours, and 34% (n=34) had been worked at 6 hour per day.
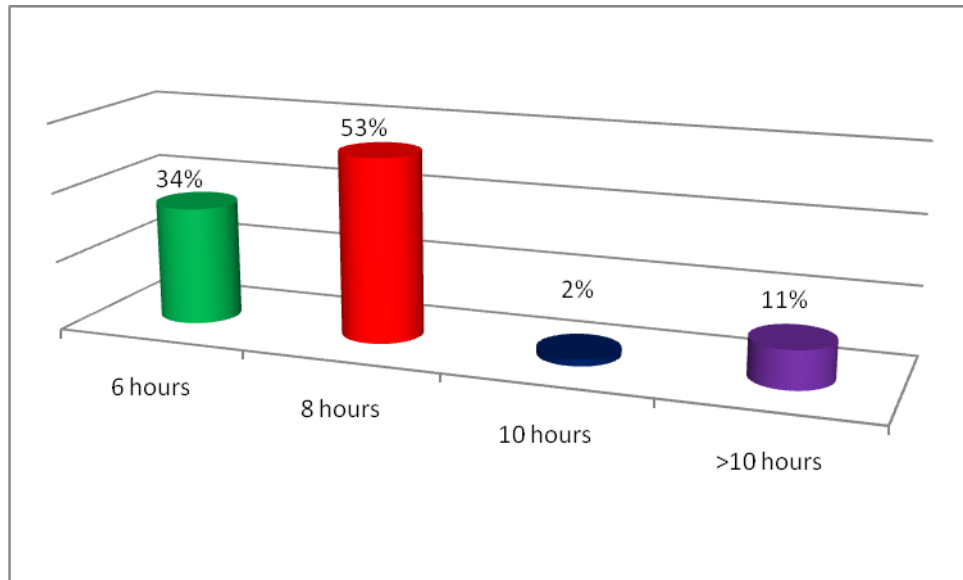
Figure No.8: Work hours of the participants

Male Female ratio of the participants

Among the 100 participants 84 were female and 16 were male. In percentage 84% participants were female and 16% were male.
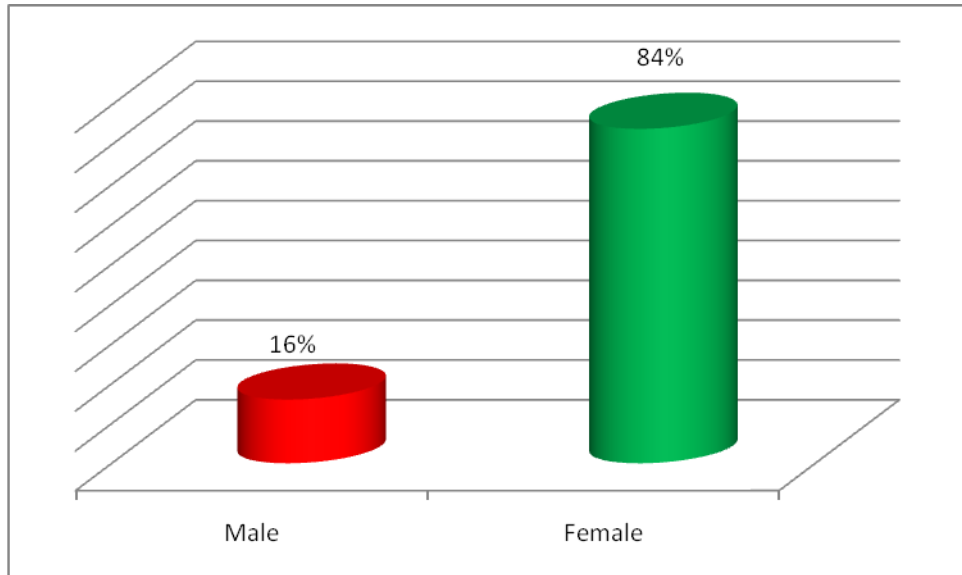
Figure No.9: Male Female ratio of the participants

Religion of the participants

Among the 100 participants 74 participants were muslim, 18 participants were Hindu and 8 participant are Christian. In percentage 74% participants were muslim, 18% participants were Hindu and 8% participant were Christian.
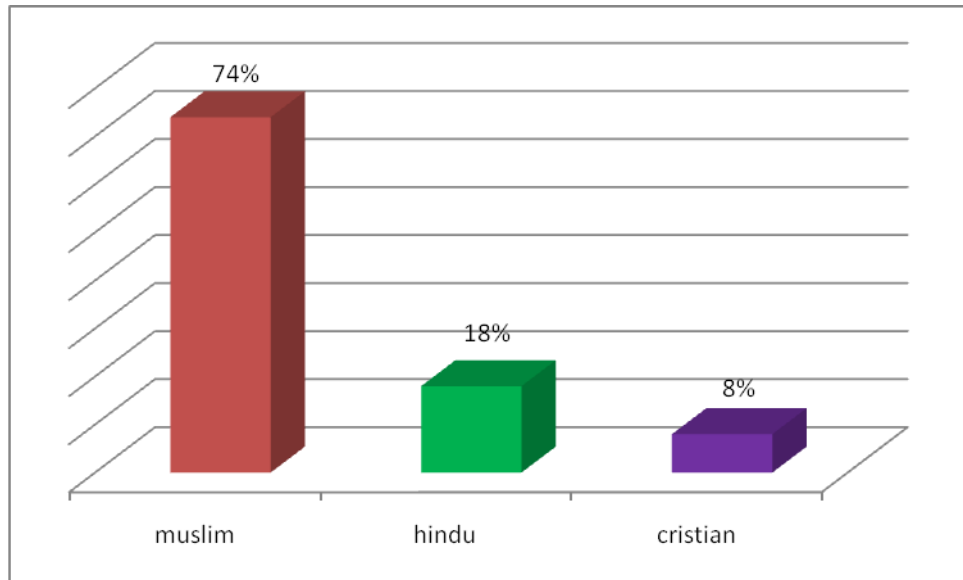
Figure No.10: Religion of the participants

Pain that affect on social life among participants

Among the all participants 51%(n=51) participants were affected and where the pain affect their social life,the frequencies of LBP among the different participants and there were suffering from affectation of their social life were 43% (n=43) participant had suffered from mild pain and 7% (n=7) had suffered from moderate pain and 1%(n=1) participant had suffered from severe low back pain.
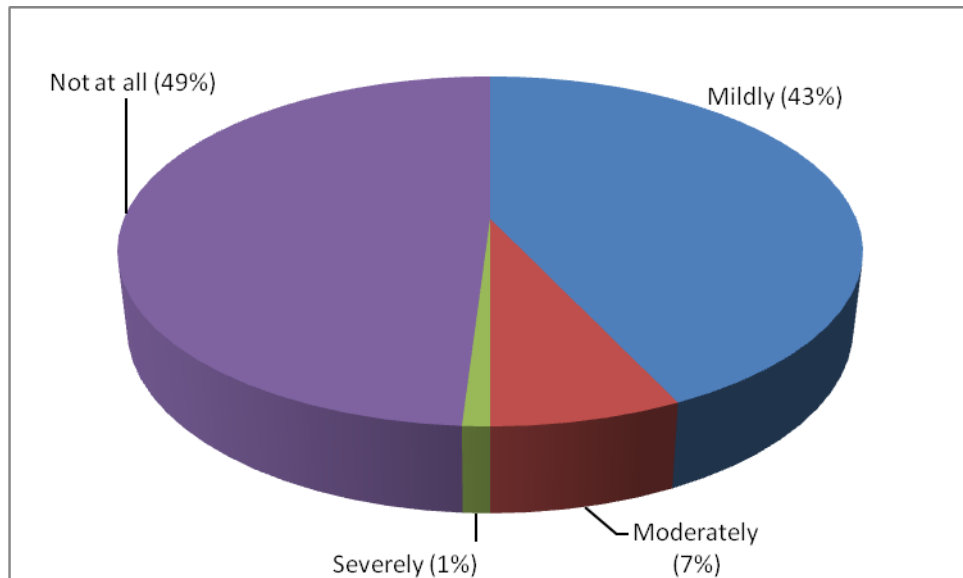

Figure No.11: Pain that affect onsocial life among participants

A cross sectional study was used to find out the prevalence of LBP among the nurses. The result of this study showed that 66% nurses suffered from LBP in Savar during the course of the study. Among the affected participants who were suffering from LBP, 42% (n=42) were married; 58% (n=58) were unmarried. Widow, divorced and single were absent. Feng et al.,(2007) showed that the prevalence of low back pain among the nurses were 66% in Taiwan. In another studies showed that prevalence of low back pain among the nurses in Hong Kong (41.6%) (Yip, 2001). Italy (44%) (Violanteet al., 2004). and England (45%) (Smedley et al., 1995).which are similar to those found in Taiwan (66%), Italy (44%), and England (45%) nursing staffs, so the investigator could said that the literature support the result of this study. In this study it was found that among the sufferer group most of the nurses more than one year of duration (31%), suffered from central pain (56%). In case of severity which was measured by using VAS scale, among the 100 participants 66 (66%) were suffered from LBP, and among the all participants most of the participants suffered from mild to moderate type back pain than the severe type pain and where; 30(30%) reported that it was mild, 23(23%) was moderate. Out of the 13 nurses with severe LBP.

According to Sikiru & Hanifa (2010) suggested that among One hundred and thirty 130(43.34%) nurses indicated that their pain was mild and that it did not disturb their daily activities; 116 (38.66%) reported that it was moderate and 54(18%) was severe. Which was similar to the result of this study, and most important causes of LBP in all respondents in our study were poor socio-economical condition as well as lead poor healthy life style, so naturally their pain adaptability were high, and as well as pay less concentration on their back pain than the Nigerian nurses, so the investigator could said that the literature support the result of this study. In this study the frequency of LBP among the different participants and their time duration of practice among the nurses highest number was in between the 1-5 years. And the participants were at 71 (71%) and the lowest numbers were 6-10 years and the participants were at 9 (9%). Another number of participants were 20 (20%), and duration of practice was >10 years. According to French et al. (1997) the category of less than 2 years' working experience had the highest prevalence; all subjects in this category reported

back pain. The second highest prevalence appeared in the category concerning work experience of 2 to less than 5 years; 14 (87·5%) respondents reported back pain and two (12·5%) did not. In the category '5 to less than 8 years', eight (66·7%) subjects reported back pain, while 11 (78·6%) had back pain in the category 'more than 8 years. which are similar to those found in Hong Kong nurses, so the investigator could said that the literature support the result of this study. This study showed that the non registered nurses were more affected by LBP (50%) Among the all affected participants who were suffering from LBP, 50% (n=50) nurses were non registered, 49% (n=49) nurses were registered, and 1% (n=1) nurses were post graduated pass, Josephson et al. (1998) also showed that a registered nurse, seemed to decrease the relative risk of consultation for low-back pain than the non registered nurses and in another studies Vidernan (1984), Lagerstrom (1995) have both showen that the assistant nurses have a higher physical work load and also a greater risk of low-back pain when compared with registered nurses. and In another study Josephson (1998) suggested that 80% non registered nurses were experienced by LBP and where only 41% nurses were registered, Which was similar to the result of this study ,And the cause of LBP (over work load and knowledge of back care Hygiene) in Bangladesh and municipality of Norrtalje, situated north of Stockholm were same.

This study also showed that the participants who were maintained standing posture most of the time during practice that participants were more affected than the participants who were maintained sitting and bending posture, among the suffering group 70% nurses were maintained standing posture, 22% nurses maintained sitting posture and another 8% nurses maintained forward bending posture during practice Among the all participants 42% (n=42) participant had been travelling affect on their back pain. Among participants who had been travelling affect on their back pain, 22% (n= 22) participant had been mild travelling affect on their back pain, 18% (n=18) participants had been moderate travelling affect on their back pain, 2% (n=2) participants had been severe travelling affect on their back pain. And in this study also showed that among the all participants 48% (n=48) participant had been lifting affected for their low back pain. Estryn et al. (1990) suggested that the awkward work postures and standing posture a great parts of a day were associated with a double risk of back problems among French nurses, as was also frequent lifting, pulling, and pushing. Other studies have also found that lifting and pushing, as well as

walking and standing great parts of a day, are of significance for low-back problems (Ljungberg et al., 1989). However, in a study in which nurses frorn hospitals in Belgium and The Netherlands were studied, it was found that, in spite of the heavier work load among Dutch nurses, the life-time prevalence of low-back problems was higher alomg Belgium nurses. The work load was defined as time per day spent on strenuous patient-handling tasks (lifting, turning, helping, etc) (Bmton et al., 1997). Comparison of these results explore that, This study does support this study because there were most similarities in between work place environment and participants etc.

In this study showed that among the respondent participants who were suffering from LBP, the lowest age was 17 and highest age was 57 years, the mean age was 25.70± (SD 6.661). The frequencies of LBP among the different age group were: 17–27 years: 83%; 28–37 years: 9%; 38–47 years: 6%; 48-57 years: 2%. According to data view, the investigator could say that the frequency of LBP among the nurses was highest in between the 17-27 years. Among the participants the higher number of the participants were at the of 23 and 24 years respectively and the numbers were 13 (13%). The number of ≤30 years were 87 (87%) and >30 were 13 (13%). and Among the all participants 84 were female and 16 were male. In percentage 84% participants were female and 16% were male.

Niedhammer et al. (1994) suggested that among the French nurses the age range 40-44 years the risk of lumbar pain was twice as high as for the group <35 years of age among French nurses. A literature review has, on the contrary, shown that nurses with low back problems are often younger than those without these problems.According to Sikiru & Hanifa (2010) suggested that the age of subjects ranged from 25-55 years with mean and SD of 39.20+9.09 years. There were 148 (36.27%) males and 260 (63.73%) females out of which 96 (23.53%) males and 204 (50.00 %) females reported LBP; while 52 (12.75%) males and 56 (13.73%) females reported no LBP. Prevalence of LBP Low back pain presently and within the last 12 months was reported by 300 respondents (73.53%). Of the 300 respondents reporting LBP, 96 (32%) were males and 204 (68%) were female. Comparison of these results explore that, This study does support this study because there were most similarities in French nurses ages, and differ from Nigerian nurses due to differentiation of work place environment, poor socio-economical and nutritional factors of participants etc. In this

study showed that among all of the (100) participants 53% (n=53) participants had been working for 8 hours, 11%(n=11) had been working for >10 hours, and 34% (n=34) had been working for 6 hour per day, and respondents working 42–60 hours per week and respondents these working hours per week lead to the level of psychological distress. Spurgeon et al. (1997) concluded that long working hours were a risk factor of mental health disorders, and most of the evidence in their review (up to 1997) was related to situations where working hours exceeded 50 hours per week. Later, studies of nursing personnel showed no difference in the prevalence of psychological distress between those who were working less than 35 hours and those who were working 35 hours or more (Bourbonnais et al., 1999). or between part-time and full-time workers (Greenglasset al., 2001). Which was similar to the result of this study so the investigator could said that the literature support the result of this study.

In this study showed that among the respondent participants who were suffering from LBP, 21% (n=21) participants had positive previous traumatic history and 79% (n=79) participants had negative previous traumatic history on back. So according to data view, previous history of trauma had not any effect on LBP.According to Sikiru & Hanifa (2010) suggested that 200 (66.67%) of the LBP cases believed that their LBP was related to their work (occupation) while 40 (13.33%) and 60 (20.00%) associated their back pain with domestic and previous trauma respectively. There was significant association between activities (causative factors) and incident of LBP at $p< 0.05$. This study does support this study because there were most similarities in between previous traumatic history among the participants. In this study found that among the all participants 66% (n=66) were affected and who were suffering from LBP and their pain were worse due to maintained following posture during practice, 38% (n=38) participants maintained standing, 16% (n=16) participants maintained bending and 6% (n=6) participants maintained sitting and another 6% (n=6) participants maintained painful walking posture most of the time during practice. So the investigator found from this study that the participants who maintained the long time standing posture during practice there had the heighest risk of LBP,and followed by bending and sitting position. According to Josephson et al., (1998) the work in forward-bent positions and with a high energetic load, but without lifting, was a higher risk of LBP. In another study Hignett (1996) on nursing personnel have shown an association between the amount of patient-handling and the risk of low-

back pain, Patient-handling involves work in forward-bent positions, lifting, and also manual handling such as pushing and pulling. The highest risk estimate for the nursing personnel was found for those highly exposed to work in forward bending positions. Which was similar to the result of this study about the maintained posture during practice so the investigator could said that the literature support the result of this study. In this study found that among the affected participants who were suffering from LBP, 56% (n=56) participant had suffered from central pain and 8% (n=8) participants had radiated to buttock pain and about 2% (n=2) pain were radiated to leg. And among the affected participants, 11% (n= 11) participant had beenincrease their back pain, 22% (n=22) participants had been decreasing of their back pain, and 7% (n=7) participants had been fluctuating change on their back pain as day progression. and Among all of the affected participants, 49%(n=49) participants had been hampared their ADL ,and among the all participants 51%(n=51) participants where the pain affect their social life.

French et al. (1997) showed that the 63% of the back pain sufferers were experiencing lower back pain, and another 26% of pain was related to multiple sites which included the lower back, is not surprising given that the lower back is the most susceptible site. The lower lumbar discs, L4–L5 and L5–S1, are subject to the greatest mechanical stress, compression force and the greatest degenerative changes (Deede, 1987). These compression forces are generated by heavy physical work, manual lifting and prolonged static work posture. This explains why most subjects report stooping as the most likely static factor contributing to their back pain. This study does support this study because there were most similarities of presented painful area and radiation of pain between participants.In this study among 100 participants 76(76% participants were had been not took any treatment for their LBP, and only 24% nurses took treatment for their back pain and the frequency of taking treatment were 15 (15%) took medication, 7 (7%) took both physiotherapy and medication and 2 (2%) participants took only physiotherapy treatment for their LBP.According to Sikiru&Hanifa(2010) showed that the 125 (41.67%) participants sought of their low back pain relief from medical consultation prescriptions, 81 (27%) sought relief by physiotherapy, while the remaining 94 (31.33%) sought relief by self medication. This study does support this study because there were most similarities in between affected

participants who were took treatment for there LBP. So the investigator could said that the literature support the result of this study.

CHAPTER -VI: CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

Nursing work in close contact with patients often involves both heavy loads and unfavorable body positions. It also often includes elements such as "save the patient"situations, for example, those in which the patient's legs give way or the patient is about to fall out of a bed or off a chair. Such situations can cause uncontrollable loads on nursing staff, loads that can irsefutably be assumed to give rise to injuries to the back and other parts of the body. High turnover among young nurses and the use ofmedical staff as a reference group are factors that may lead to an underestimation of the risk of developing low back problems. The study concluded, therefore that LBP is a widespread disease affecting nurses but not a major cause of sickness absence in the workplace. Poor knowledge of back care ergonomics and unavailability of lifting equipment are major predisposing factors to LBP among nurses (occupation hazard oriented).

LBP has great impact causing severe long term physical disability and give rise to huge costs for the society. Literature showed that more than one-third of disability is caused due to low back problems. From this study, it was found that the more than half of the nurses (66%) suffer from LBP in our country. Among these most of the nurses suffer from mild to moderate type of LBP rather than the severe LBP. 56% suffered from central and 10% suffered from radiating pain and most of the participants were suffering from LBP for more than 1 year (31%) of duration. Among the affected group 24% take treatment, among those who were taken treatment for their LBP but only 9% took PT. The investigator has tried to show the prevalence and characteristic of LBP among the nurses and the possible risk factors for the LBP according to participants view. According to the participant view some socio-demographic characteristic (age, sex and marital status), duration of practice, prolong bending posture, and the leisure had a positive effect on the LBP among the nurses.

6.2 Recommendations

The aim of the study was to find out the prevalence of LBP among the nurses. Though the study had some limitations but investigator identified some further step that might be taken for the better accomplishment of further research. The main recommendations would be as follow:

Reminder course on back care ergonomics and patient transfer should be organized for nurses on regular basis. Hospitals should be well equipped with all necessary lifting equipment. All these might go a long way in reducing the high rate of LBP among nurses. It is apparent from this study that nurses in Bangladesh demonstrate one of the highest incidences of back pain when compared with other studies In this situation, initial nurse education will never be sufficient and the most obvious course of action seems to be periodic and continuous in-service training. The costs of training are easily justifiable in terms of savings made by avoiding loss of nurses to the profession, absenteeism and potential danger to the patient

- The random sampling technique rather than the convenient would be chosen in further in order to enabling the power of generalization the results.
- The duration of the study was short, so in future wider time would be taken for conducting the study.
- Investigator use only 100 participants as the sample of this study, in future the sample size would be more.
- The ratio of rural hospitals nurses and urban hospitals nurses participants were not equal, in case of further the equality of the rural and urban participant should be maintained for the accuracy of the result.
- In this study, the investigator took the nurses only from the only three selected medical college and hospitals area of Savar as a sample for the study. So for further study investigator strongly recommended to include the nurses from all over the Bangladesh to ensure the generalize ability of this study.

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APPENDIX -1

Verbal Consent Statement

(Please read out to the participants)

Assalamualaikum, my name is H M Harun-Ar-Rashid, I am conducting this study as a part of my academic work of B. Sc. in Physiotherapy under Bangladesh Health Professions Institute (BHPI), which is affiliated to University of Dhaka. My study title is "Prevalence of Low back pain among the nurses at Savar". I would like to know about some personal and other related information regarding Low back pain. You will need to answer some questions which are mentioned in this form. It will take approximately 20-30 minutes.

I would like to inform you that this is a purely academic study and will not be used for any other purpose. The researcher is not directly related with this nursing area, so your participation in the research will have no impact on your present or future jobs in this area. All information provided by you will keep in a locker as confidential and in the event of any report or publication it will be ensured that the source of information remains anonymous and also all information will be destroyed after completion of the study. Your participation in this study is voluntary and you may withdraw yourself at any time during this study without any negative consequences. You also have the right not to answer a particular question that you don't like or do not want to answer during interview.

If you have any query about the study or your right as a participant, you may contact with me and/or Mohammad Alamgir Chowdhury, Assistant Professor of Physiotherapy, Bangladesh Health Professions Institute (BHPI), Savar, Dhaka.

Do you have any questions before I start? Yes / No

So, may I have your consent to proceed with the interview or work?

Yes…………….   No……………

Signature of the Participant _____

Signature of the Interviewer _____

QUESTIONNAIRE(Appendix-2)

Part-A: Personal Information

- **Name:**
- **Address:**
  - Village/house no:
  - Post office:
  - Thana:
  - District:
- **Mobile no:**
- **Date of interview: ………………..** (dd/mm/yy)

Part B: Socio-demographic Information

- **Age:**
- **Sex:** male/female
- **Patient height (in foot): …………………….**
- **Patient weight (in kg): …………………….**
- **Marital status:**
  1. Married   2.Unmarried
  3.Widow   4.Divorce   5.Single
- **Religion:**
  1. Muslim   2.Hindu
  3, Christian   4.Others
- **Educational level:**
  1. Non registered
  2. Registered
  3. Post Graduated

Part C: Back pain related

1. **How long have you been suffering from your low back pain?**
   1. <1 month   2. 1-6 months
   3. 7-12 months   4. >1 years

2. **Did you have any trauma or any injury in back?**

- Yes

- No

If yes, what kind of trauma did you have?

1. Fall from height   2.Direct blow

3.Heavy weight lifting   4.Not applicable

3 How do you describe the severity of the low back pain you suffer from, according to VAS scale?

1. 1-4
2. 5-7
3. 8-10
4. Not applicable   _____

                                                    1   5 10

4   **Did you ever taken any treatment due to low back pain?**

- Yes

- No

If yes, what kind of treatment did you receive for low back pain?

1. Medication   2.Physiotherapy

3.Both   4.Not applicable

5What was the intensity of back pain?

1. Can tolerate without having medication
2. Only medication provided complete relief from pain
3. Both medication & physiotherapy provided complete relief from pain
4. Both medication & physiotherapy had no effect on pain

6. What was the exact area of pain?

1 Central   2.Radiated to both buttock

3. Radiated to lower limb   4.Not applicable

7.How long have you been working as a clinical nurse?

1. <1 year   2. 1-5 years

3. 6-10 years   4.>10 years

8. Does the low back pain hamper your clinical practice as a nurse?

- Yes

- No

If yes, then to what extend does your pain hamper your clinical practice?

      1. Mildly hamper   2. Moderately hamper

3.Severely hamper   4.Not at all

9. In which posture do you work most of the time during practice?

1.Sitting 2. Forward bending

      3.Backward bending   4. Standing

10.How many hours do you work per day as a nurse?

1.6 hours   2. 8 hours

      3.10   hours   4.>10 hours

11.Which posture makes your pain worse?

      1. Standing   2.Sitting

      3.Lying   4.Bending

5.Walking

12. Which posture relives your pain?

    1.Standing2 Sitting

      3.Lying   4 Bending

5.Walking

13 How does your pain affect your ADL?

      1. Mildly   2.Moderately

      3.Severely   4.Not at all

14.How does your pain affect your social life?

      1. Mildly   2.Moderately

      3.Severely   4.Not at all

15.How does lifting affect your back pain?

      1. Mildly   2.Moderately

3.Severely   4.Not at all

16.How does travelling affect your back pain?

      1. Mildly   2.Moderately

      3.Severely   4.Not at all

17.What is the change of your back pain as day progress?

      1. Increase   2.Decreas

      3.Fluctuating   4.No change

18. How does stair up affect your back pain?

1. Increase   2. Decrease

        3.Fluctuating   4.No effect

19. How does stair down affect your back pain?

1. Increase   2. Decrease

      3.Fluctuating   4. No effect

20.Does your back pain cause sleep disturbance?

- Yes
- No

If yes, how much back pain affect your sleep?

1. Mildly   2. Moderately

3.Severely   4. Not applicable

21. Have you ever been taken sick leave due to low back pain?

- Yes
- No

If yes, then how many days did you have taken sick leave since last 12 months?

Days…………………

22. What do you do in your leisure period?

1.Gardening   2. Watching TV

3. Reading   4. Others (specify…………………)

23. Are you satisfied with the physical environment (structural facilities) of your work place?

- Yes
- No

24. In your view, how likely the pain is associated with your current clinical practice?

1. Strongly associated   2.Weakly associated

3. Not associated at all