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Research Article

ASSESS PREVALENCE OF LOW BACK PAIN AND ITS EFFECT IN DAILY ACTIVITIES AMONG STAFF NURSES

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ABSTRACT

Occupational low back pain is a common health problem worldwide. Healthcare workers (HCWs) are at a higher risk of developing low back pain due to a variety of factors.

Aim: To assess the prevalence of low back pain and its' effect in daily activities among staff nurses working in clinical services.

Objectives: Assess the prevalence of low back pain among nurses working in All India Institute of Medical Sciences, Rishikesh and assess the risk status of nurses with low back pain.

Methodology: A cross sectional survey method with a purposive sampling method will be used to collect data among nurses.

Conclusion: Study had reported incidence of low back pain were 59.3% staff nurses and only 41 % nurses who did not have it. The reason for low back pain may be handling and mobilizing between 1-5 patients. Younger nurses age group between 24 -27 years (60%) had the highest low back pain while older nurses aged 32- 35 years (8%) had least low back pain. Institutions must take interest in nurses to be allocate their work according to their efficient, skill, specialty training. Nurses to be rotated in caring the patient such as with a scheduled time interval and can assign caring of patient according to full dependent, partial dependent and independent patients group.

INTRODUCTION

Low back pain (LBP) is one of the most serious health problem of tremendous medical and socioeconomic dimension and a major cause of disability. Low back pain can defined a pain localized between the 12th rib and the interior gluteal folds, with or without leg pain. Nurses are known to be a high risk group for occupational low back pain. Direct care nursing personnel around the world report high numbers of work-related musculoskeletal disorders. The impact of low back pain for nurses includes time off work, increased risk of becoming chronic, as well as associated personal and economic costs. Nurses who suffer from chronic back pain will have an impact on them while standing up from sitting and lifting the patients. For direct care nursing staff, manual handling of patients such as moving or repositioning a patient using their own body strength is the major cause of these injuries. Indeed, 80% of the general active population suffers from low back pain at least temporarily. His study with 350 employees shows that common low back pain is the first reason of affections limiting professional activities before 45 years and the third after respiratory and traumatic affections between 45 and 65 years. In western countries, many of studies researched on back pain as a common problem for nurses.

A study among nurses in revealed that 53.2 % of the nurses had worked related low back pain and a positive correlation was seen between place of work and pain duration [4]. The nature of work influences the prevalence of low back pain among nurses. Nurses working in areas requiring strenuous physical activity are more prone for low back pain. Improper postural mechanics also has a direct effect on the prevalence of low back pain. Patient lifting and postural requirements during the work poses a high risk to nurses in a hospital environment [5]. Especially in the developing countries absence or lack of lifting aids forces the nurses to strain during shifting of patients. It is reported that poor knowledge of back care ergonomics and unavailability of lifting equipment are major predisposing factors to low back pain among nurses [6]. Overweight and obesity also seem to worsen the condition among adults [7]. Nurses are the major work force of any health care. Their wellbeing will reflect on the standard and quality of patient care. Low back pain is a common occupational hazard which can affect the performance of nurses in the clinical area

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RESEARCH METHODOLOGY

Research Design: A cross sectional Survey Method
Study Settings: The study setting will be AIIMS, Rishikesh
Population: The staff nurses working in AIIMS, Rishikesh. Uttarakhand.

Sampling Technique: A purposive sampling method will be used to collect data.

Inclusive Criteria

- The staff nurse male and females.
- The staff nurse who are working in AIIMS, Rishikesh.

Exclusive Criteria

Those who are not willing to participate.

Tool

The study tool consists of demographic schedule,self-structured questionnaire on low back pain, and low back pain disability preform.

Data Analysis

The data will be analysed by descriptive and inferential statistics.

RESULTS

Most of nurses were in age group of 24-27 as 60% (80/133), 56% were females (74/133) from participated nurses. Only 36% (48/133) were married and out of it 23%were having one child, 15% were having two children, 60% were having no any child till now.

In regard of professional experience most of them 51 % having 4-6 years of clinical nurses as taking care of patients in various units.

In regard of physical characteristics most then 53% were between 158-167 cm of height and 35% were from 51-60 kg of body weight and only 23% of from 61-70 kg of body weight. According to physical built most of them were standard height and weight 51-60 kg which corresponds their standard physical built up.

On account of low back pain most among nurses 39% were having mild pain, 15% had moderate pain and only 5% were having severe pain.

Regarding their precious health status, 11% were having precious problem leading to pain, 7% only underwent precious surgery and 65% were having no previous serious infections. Only 12% were suffering from urinary treat infections.

In non-pharmacological strategies for pain management most of them 38% were take rest in bed, 20% were undergoing physio therapy method and 22% were using relaxation techniques whereas in pharmacological strategies 20% were regularly using analgesics.

In regard of causes of pain to nurses most of them 62% told this due to work activity and 38% told unknown reasons for pain.

In regard of location of pain in back 62% had given history of lumbar region pain and 42% had history of pain since 2-6 year and 43 % had one year history of pain and 9% had more than six years history. Most of them 81% reported back pain nature was gradual onset.

In regard of time of the worse back pain most of them reported 34% at night and majority 31% reported occasionally type of pain. While assessing aggravating pain, most of them 35% reported standing, 27% reported sitting, 22% reported walking and 16% reported physical effort.

Level of pain for nurses, 39% were mild pain, 15% were moderate pain and only 5% were in worst pain.

Out of 79 staff nurses who are having pain, their daily activity were studied, 30 % among them were having no pain at the moment, on regarding personal care 30% of them have painful when look after self and which needs careful activity 22% head some help but manage most of personal care and need help early in most aspect of self-care.

In lifting of objects 32% can lift heavy weights but extra pain, 23% have pain which prevents them from lifting object from floor, but can do, 10% had manage to lift light weight from floor and 19% card lift only very light weight objects only.

Regarding walking 27% told pain presents from walking more than 1.6 km and 28% told pain from walking more their half kilometre 3% told while walking using stick. 32 % reported pain prevents themin sitting position more than one hour. 47% reported they can stand as long as they want but it gives them extra pain.

44% staff nurses reported that their sleep were occasionally disturbed by pain. 41 %staff nurses pain has no significant effect on their social life apart from limiting their activity in term of more energetic activity like sport and 39% staff nurses reported that they can travel anywhere but gives them extra pain.

Table 1 Demographic Profile of Nurses

Sr. No.	Demographic variables	Frequency (%age)
	Age:	
1.	1. 20- 23	15 (11)
	2. 24- 27	80 (60)
	3. 28-31	27 (21)
	4. 32-35	11(8)
	Gender:	
2.	1. Male	59 (44)
	2. Female	74 (56)
	Marital status:	
	1. Married	48 (36)
	2. Single	85 (64)
3.	**If married then number of children: (48)**	
	1. One child	11 (23)
	2. Two children	7 (15)
	3. Three children	1(2)
	4. No child	29 (60)
	Years of experience:	
4.	1. 1- 3 years	53 (40)
	2. 4- 6 years	68 (51)
	3. 7- 9 years	8 (6)
	4. 10- 12 years	4 (3)
	Height:	
5.	1. 148-157 cm	23 (17)
	2. 158-167 cm	71 (53)

	3. 168- 177 cm	28 (22)
	4. 178- 187 cm	8 (6)
	5. 188-197 cm	3 (2)
	Weight:	
	1. 41- 50 Kg	27 (20)
6.	2. 51- 60 Kg	46 (35)
	3. 61- 70 Kg	31 (23)
	4. 71- 80 Kg	19 (14)
	5. 81- 90 Kg	10 (8)
	Level of pain:	
	1. No pain	54 (41)
7.	2. Mild pain	52 (39)
	3.Moderate pain	20 (15)
	4. Severe pain	7 (5)
	Any previous problem leading to pain	
8.	1. Yes	15 (11)
	2. No	118 (89)
	Previous surgery	
9.	1. Yes	9 (7)
	2. No	124 (93)
	Previous Infections	
	1. No	86 (65)
10.	2. Fever	21 (16)
	3. Urinary tract infections	16 (12)
	4. Any injuries	10 (7)

Table 2 Clinical Variables of Staff nurse suffering from pain

N=79

Sr. No.	Clinical variables	Frequency (%age)
	Strategic of non-pharmacological management	
	1.Rest in bed	30 (38)
	2.Binder	1 (1)
11.	3.Physiotherapy	16 (20)
	4.Hot compresses	10 (13)
	5.Relaxation	17 (22)
	6.Distraction	5 (6)
	Pharmacological strategies	
	1.Analgesics	16 (20)
12.	2.Anti-inflammatory	9 (11)
	3.None	54 (69)
	Causes of pain	
13.	1.Know due to work activity	49 (62)
	2.Unknown	30 (38)
	Location of pain	
	1.Cervical	18 (23)
14.	2.Lumbar	49 (62)
	3.Cervical and lumber	12 (15)
	Persistent of pain since	
	1.One year ago	34 (43)
15.	2.2-6 year	33 (42)
	3.>5 years	12 (15)
	Quality of back pain	
	1.Throbbing	24 (30)
16.	2.Shooting	21 (27)
	3.Knife life pain	20 (25)
	4.Hot burning	14 (18)
	Onset of back pain	
17.	1.Sudden	15 (19)
	2.Gradually	64 (81)
	Time of the worse back pain	
	1.In the morning	15 (19)
18.	2.In the afternoon	16 (20)
	3.In the evening	21 (27)
	4.Late at night	27 (34)
	Intensity of back pain defer with time	
	1.Constantly	18 (23)
19.	2.Nearly constantly	14 (18)
	3.Intermittently	22 (28)
	4.Occasionally	25 (31)
	Factors aggregating pain	
	1.Standing	28 (35)
21.	2.Sitting	21 (27)
	3.Walking	17 (22)
	4.Physical effort	13 (16)

Table 3 Daily Activities of Nurses who are having pain

Sr. No.	Variables	Frequency (% age)
	Pain Intensity	
	- I have no pain at the moment	24 (30)
	- Pain is very mild at moment	22 (28)
1.	- Pain is moderate at moment	17 (22)
	- Pain is fairly severe at moment	13 (16)
	- Pain is very severe at moment	1 (1)
	- Pain is the worst imaginable at moment	2 (3)
	Personal care (washing, dressing etc.)	
	- I can look after myself normally without causing extra pain	10 (13)
	- I can look after myself morally but causes extra pain.	16 (20)
2.	- It is painful to look after myself and I am slow and careful.	24 (30)
	- I need some help but manage most of my personal care.	17 (22)
	- I need help every day in most aspects of self-care.	12 (15)
	- I do not get dressed, I wash with 1difficulty and stay in bed	0 (0)
	Lifting:	
	- I can lift heavy weights without extra pain.	
	- I can lift heavy weights but it gives extra pain.	10 (12)
	- Pain prevents me from lifting heavy weights off the floor,	25 (32)
	but I can manage if they are conveniently placed e.g. On a	18 (23)
3.	table.	
	- Pain prevents me from lifting heavy weights, but I can	8 (10)
	manage light to medium weights if they are conveniently	
	positioned.	15 (19)
	- I can lift very light weights.	3 (4)
	- I cannot lift or carry anything at all.	
	Walking:	
	- Pain does not prevent me walking any distance.	28 (34)
	- Pain prevents me from walking more than 1 mile.	21 (27)
4.	- Pain prevents me from walking more than ½mile.	22 (28)
	- Pain prevents me from walking more than 100 yards.	6 (8)
	- I can only walk using a stick or crutches.	2 (3)
	- I am in bed most of the time.	0 (0)
	Sitting:	
	- I can sit in any chair as long as l like.	24 (30)
	- I can only sit in my favourite chair as long as I like.	18 (23)
5.	- Pain prevents me sitting more than one hour.	25 (32)
	- Pain prevents me from sitting more than 30 minutes.	8 (10)
	- Pain prevent me from sitting more than 10 minutes.	3 (4)
	- Pain prevents me from sitting at all.	1 (1)
	Standing:	
	- I can stand as long as I want without extra pain.	
	- I can stand as long as I want but it gives me extra pain.	17 (22)
	- Pain prevents me from standing from more than 1 hour.	37 (47)
6.	- Pain prevents me from standing from more than 30 minutes.	15 (19)
		5 (6)
	- Pain prevents me from standing from more than 10 minutes.	3 (4)
		2 (2)
	- Pain prevents me from standing at all.	
	Sleeping:	
	- My sleep is never disturbed by pain.	6 (8)
	- My sleep is occasionally disturbed by pain.	35 (44)
7.	- Because of pain I have less than 6 hours sleep.	10 (13)
	- Because of pain ha have less than 4 hours sleep.	16 (20)
	- Because of pain ha have less than 2 hours sleep	12 (15)
	- Pain prevents me from sleeping at all.	0 (0)
	Social life:	
	- My social life normal and gives me no extra pain.	9 (11)
	- My social life is normal but increases the degree of pain.	17 (22)
	- Pain has no significant effect on my social life apart from	32 (41)
8.	limiting my more energetic interests e.g. sport.	
	- Pain has restricted my social life and I do not go out as often.	7 (9)
		5(6)
	- Pain has restricted my social life to my home.	9 (11)
	- I have no social life because of pain.	
	Travelling:	
	- I can travel anywhere without pain.	
	- I can travel anywhere but it gives me extra pain.	11 (14)
	- Pain is bad but I manage journeys over two hours.	31 (39)
9.	- Pain restricts me to journeys of less than one hour.	21 (27)
	- Pain restricts me to short necessary journeys under 30 minutes.	11 (14)
		5 (6)
	- Pain prevents me from travelling except to receive treatment.	0 (0)

DISCUSSION

Nursing is a healthcare profession focused on the care of individuals, families, and communities so they may attain, maintain, or recover optimal health and quality of life from conception to death. Nursing includes the promotion of health, prevention of illness, and the care of ill, disabled and dying people. The unique function of the nurse is to assist the sick individual, in the performance of those activities contributing to health or activities that he would perform unaided if he had the necessary strength, will or knowledge. Nurses who work in emergency department and intensive care unit, where all patients are highly dependent; constant attention and fast action from nurses is needed. So the nurses have to ignore their own safety to save the patients of life. Nurses that work in the intensive care unit are also very prone to back problems. These nurses often deal with patients that have lost consciousness. These patients present a unique challenge as they cannot do anything for themselves. Intensive care unit nurses make more frequent rounds to ensure patients receive any needed treatment. They also must do all of the patient movement on their own. The patient is not awake to help with any part of the process, causing them to become extremely hard to move. These patients must also be moved or turned every few hours so that bed sores do not appear. The number of patients turned multiplied by the two hour turn over frequency, creates an atmosphere ripe with the possibility of back pain and problems. [18] Transferring patients and making up patient beds is really hard on a nurse's back.

This is compounded by the fact that a nurse repeats these actions multiple times during a day, for days on end. Typically, nurses may find themselves lifting an average of twenty patients daily. This is in addition to moving an average eight patients from their bed to a chair and back. "Patients are sicker and bigger than they've been historically," explains Schaumleffel, making nurses' jobs more dangerous to their own health. The frequency of manual labour on the job also increases the risk throughout a career. "Back injuries are micro traumas the damage accumulates over time," she says. The more you work in awkward postures or lift heavy loads, the greater your risk. If a patient is unconscious, nurses will try to turn him every two hours or so to prevent bed sores.[19] 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. Low back pain (LBP), perhaps more accurately called lumbago or lumbosacral pain, occurs below the 12th rib and above the gluteal folds. Low back pain is a well-recognized cause of morbidity in the industrialized world, where several studies have reported the occurrence of LBP in general population and occupational settings .The complaint of back pain is among the most common medical conditions.

Low back painincidence among staff nurses were 59.3% and only 41 % nurses who did not have it. The reason for low back pain may be handling and mobilizing between 1-5 patients. Younger nurses age group between 24 -27 years (60%) had the highest low back pain while older nurses aged 32- 35 years (8%) had least low back pain. Studies had shown that nurses between the ages of 20 to 30 years had the highest prevalence of occupational back pain. Junior nurses had higher rate.

Studies showed that lifting, prior injury, and being overweight were risk factors for work related low back injury (WLBI) among nurses. Age, increased BMI and disturbed psychological profile were among other.

Rooms in hospital are often small, and nurses had to move the furniture around so that they can do their jobs. Most of the time nurses are lifting devices that would not even fit in these rooms; these are some causes of LBP [5]. Some patients may also be combative, contracted, or uncooperative. Any unpredictable movement or resistance from the patient may throw the nursing personnel off balance during the transfer, resulting in low back pain.

Static work postures were also linked to an increased risk of low back pain. Included in these postures were prolonged sitting, standing, and stooping. Sitting for long periods of time (especially in a fixed position) is particularly detrimental to your back health as well as your general health. Prolonged sitting fatigues and strains the lower back. Poor sitting posture makes matters worse. While sitting, there is a common tendency to allow the pelvis to tilt backward, causing the lower back to lose its natural lordotic curve at lumbar spine. This creates a pull on the muscles and ligaments and uneven compression of the intervertebral discs in the lower back and can lead to lower back pain. Sitting with the pelvis tilted forward creates an excessive lordosis of lower back which also places extra stress on the lower back. Rounding the upper back (slouching) and/or the holding the head forward is also common while sitting and is a common cause of neck and shoulder pain. In relaxed sitting the lumbar spine falls into full flexion. This increases the stress on the posterior annular wall. While some muscles may suffer from overuse from prolonged sitting, others are not being used at all.

The abdominal muscles are often relaxed while sitting, letting the stomach sag out .Even with good sitting posture, sitting in one position for too long can cause back strain. During periods of PS (prolonged standing), we periodically alter postural position. These changes are believed to be triggered by the postural control system to reduce musculoskeletal discomfort and fatigue. The underlying causes of such postural modifications could derive from the need to enhance venous pump activity (venouspooling) or decrease pressure over joint tissues. Previous studies have characterized the postural alterations that occur during PS. Deficits observed in CLBP subjects could be related to postural orientation deficits as a consequence of altered proprioceptive input or sensory integration. According to a study performed, after the prolonged standing period, CLBP subjects presented greater postural sway than healthy subjects. Increased postural sway during quiet standing has been also shown in previous studies Increase in low back pain is a neuromuscular indication of fatigue or discomfort, since standing for prolonged periods has been shown to cause fatigue. Standing, especially relaxed standing, places the lower lumbar spine in full end range extension which means that certain structures are on full stretch. Walking accentuates extension that is, it further increases the lordosis of the lumbar spine as the hind leg by its backward movement brings the pelvis into forward

inclination. The highest affected of 94% in activities apart from ADLs was found in travelling and vocation (at work).

Low back pain is a common orthopaedic problem everybody complains is there to health rented activity. Low back pain which starts as an acute pain are become a chronic pain. Chronic pain can be due to stress on level of lumbar region can be due to any tumour, continues posture distilment, excessive work activity, improper body mechanics, lack of rest or relaxation in work activity.

On the other hand, low back pain becomes chronic that leads to stress in daily activities that interrupts in quality of activities. This leads to psychological problem of stress, less concentration and avoiding of various task in work activity and leads to sleep deprivation. This leads to psychological stress and reduce the quality of work. In health profession, nurses are providing care to patients in various clinical setting as critical care, surgical, medical, orthopaedic, rehabilitation. In these clinical areas there are different categories of patients such as wholly dependent, partially dependent and independent. While caring them nurses play a critical role. In these while moving, transporting and providing nursing care they should maintain proper body posture and body mechanics. Due to their work load nurses are suffering with low back pain which starts in acute and leads to chronic condition.

However this low back pain affecting their daily activities of their life. The daily activities of standing, sitting, walking, lifting, sleeping social life and travelling. Nurses who are delivering nursing care which effects quality care nurse's low back pain which affects their daily activities prevent them from proving quality nursing care.

In avoidance of getting low back pain nurses should maintain posture while providing nursing care, maintain good body mechanics, relaxation or rest in three hectic daily. In their personal activities practice daily physical exercises yoga and other relaxation techniques. Many nurses' complaints of getting low back pain in their period of career. This shows that, nurses are started to suffer with low back pain in their initial phases of their career. Then it is becoming chronic problem for their life time with this chronic low back pain they are performing routine professional, personal daily activities will be aggregating the problems.

CONCLUSION

On the basis of organization, the nurses to be allocate duty according to their efficient, skill, specialty training. Nurses to be rotated in caring the patient such as with a scheduled time interval they can assign to care of patient with wholly dependent, partial dependent and independent. Nurses are providing continuous quality care to sick and needy should not become sick. Nurses to taken care by themselves to maintain their health. Organizations provide supportive system and educate them to prevent low back pain which is not having any pathological background. Nurses should provide quality care which improves patient satisfaction,increase health status of every individual.

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