

Prevalence of Back Pain among Physical Therapists: A Survey

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Abstract: The main objective of this study was to know about prevalence of back pain among physical therapist and how early they are affected by this problem. They are potentially exposed to back pain due to occupational risks such as poor working postures and frequent manual handling activities, often undertaken in difficult environments and with variable training regarding personal safety. This study was planned to collect data about prevalence and responses to work related back pain reported by physical therapist employed in Karachi – Pakistan. A survey questionnaire was constructed as the data collection method. The questionnaire was distributed among 90 physical therapists randomly selected from Liaquat national hospital, Agha Khan University, Ziauddin hospital and National medical centre. The questions included occupational history of physical therapist and musculoskeletal symptoms, special areas, tasks, job – related risk factors and response to injuries. The possible injuries occurred mostly in lower back. The highest risk factors in causing the injury was transferring the patients and lifting. Other job risk factors were sustained demanding postures, manual therapy techniques, repetitions and excessive work loads. Most injured physical therapist modified their techniques for continuing work by modifying body mechanics, increased use of physio aids, frequent change of work position. Among all physical therapists, 43% physical therapists had complained mild back pain, 41.9% physical therapists had complained moderate back pain and 6.5% physical therapists had complained severe back pain. The lower back was the most frequently affected body part. Onset of symptoms for the majority was within five to ten years of practices.

Keywords: Prevalence, back pain, physical therapists.

INTRODUCTION

Back pain is pain felt in the back that usually originates from the muscles, nerves, bones, joints or other structures in the spine. Back pain may have a sudden onset or can be a chronic pain; it can be constant or intermittent, stay in one place or radiate to other areas. It may be a dull ache, or a sharp or piercing or burning sensation. The pain may radiate into the arms and hands as well as the legs or feet, and may include symptoms other than pain. These symptoms may include tingling, weakness or numbness. Back pain is one of humanity's most frequent complaints. About nine out of ten adults experience back pain at some point in their life, and five out of ten working adults have back pain every year. Also, it's the single leading cause of disability worldwide. Spinal anatomy is a remarkable combination of strong bones, flexible ligaments and tendons, large muscles and highly sensitive nerves. It is designed to be incredibly strong, protecting the highly

sensitive nerve roots, yet highly flexible, providing for mobility on many different planes.

Many different structures in the spine can cause back pain, potentially when [1]:

- The large nerve roots that go to the legs and arms are irritated
- The smaller nerves that innervate the spine are irritated
- The large paired back muscles (erector spinae) are strained
- The bones, ligaments or joints themselves are injured
- The disc space itself is a source of pain.

A review of spinal anatomy is important to understand the cause of back pain.

The 12 vertebral bodies in the upper back make up the thoracic spine. The firm attachment of the rib cage at each level of the thoracic spine provides stability and structural support to the upper back and allows very little motion. The thoracic spine is basically a strong cage and it is designed to protect the vital organs of the heart and lungs. The upper back is not designed for motion, and subsequently, injuries to the thoracic spine are rare. However, Irritation of the large back and shoulder muscles or joint dysfunction in the upper back can produce very noticeable back pain [1]. The lower back has a lot more motion than the thoracic spine and also carries all the weight of the torso, making it the most frequently injured area of the spine. The motion in the lumbar spine is divided between five motion segments, although a disproportionate amount of the motion is in the lower segments (L3-L4 and L4-L5). Consequently, these two segments are the most likely to breakdown from wear and tear (e.g osteoarthritis). The two lowest discs (L4-L5 and L5-S1) take the most strain are the most likely to herniated. This can cause lower back pain and possibly numbness that radiates through the leg and down to the foot.

The vast majority of episodes of lower back pain are caused by muscle strain. Even though a muscle strain does not sound like a serious injury, trauma to the muscles and other soft tissues (ligaments, tendons) in the lower back can cause severe back pain [1].

Nerve root syndromes are those that produce symptoms of nerve impingement (a nerve is directly irritated), often due to a herniation (or bulging) of the disc between the lower back bones.

Herniated discs develop as the spinal discs degenerate or grow thinner. The jelly like central portion of the disc bulges out of the central cavity and pushes against a nerve root.

Spondylosis occurs as intervertebral discs lose moisture and volume with age, which decreases the disc height.

Spinal disc degeneration coupled with disease in joints of the low back can lead to spinal-canal narrowing (spinal stenosis). These changes in the disc and the joints produce symptoms and can be seen on an X-ray. A person with spinal stenosis may have pain radiating down both lower extremities while standing for a long time or walking even short distances.

Cauda equina syndrome medical emergency whereby the spinal cord is directly compressed. Disc material expands into the spinal canal, which compresses the nerves. A person would experience pain, possible loss of sensation, and bowel or bladder dysfunction. This could include inability to control

urination causing incontinence or the inability to begin urination.

Musculoskeletal pain syndromes that produce low back pain include myofascial pain syndromes and fibromyalgia. *Myofascial pain* is characterized by pain and tenderness over localized areas (trigger points), loss of range of motion in the involved muscle groups, and pain radiating in a characteristic distribution but restricted to a peripheral nerve. Relief of pain is often reported when the involved muscle group is stretched. *Fibromyalgia* results in widespread pain and tenderness throughout the body. Generalized stiffness, fatigue, and muscle aches are reported.

Other Causes Are

- Infections of the bones (osteomyelitis) of the spine are an uncommon cause of low back pain.
- Noninfectious inflammation of the spine (spondylitis) can cause stiffness and pain in the spine that is particularly worse in the morning. Ankylosing spondylitis typically begins in adolescents and young adults.
- Tumors, possibly cancerous, can be a source of skeletal pain.
- Inflammation of nerves from the spine can occur with infection of the nerves with the Herpes zoster virus that causes shingles. This can occur in the thoracic area to cause upper back pain or in the lumbar area to cause low back pain.

Occupational back pain is an especially frequent complaint. The job factor rated most problematic for the physical therapists was lifting and transferring dependent patients. Although physical therapists have knowledge and clinical expertise in musculoskeletal injuries, these proficiencies do not constitute immunity to their own work-related musculoskeletal disorders. Thus, specific strategies should be developed to reduce Work related musculoskeletal disorders in the practice of physical therapy and to prevent potentially disabling conditions [2].

Manual handling is an integral part of physiotherapy practice, used during both assessment and treatment of patients. It is defined by the Occupational Health and Safety Regulations (1988) as 'any activity requiring force by a person to lift, lower, push, pull, carry or otherwise move, hold or restrain any animate or inanimate object' [3]. Ongoing manual handling education and training, at least yearly, is vital so therapists are able to perform these tasks safely which is a necessity to carry out their work (Manual Handling in the Health Services, 1998) [4]. Bourrin *et al.*, [5] Injuries at work place have also been defined as

disorders of the muscles, nerves, tendons, joints, cartilages and spinal discs associated with exposure risk factors in a work place [6].

Scholey and Hair found an annual prevalence of work related back pain; these researchers determined that newly qualified physiotherapists were particularly vulnerable, although they were more satisfied with their training in lifting skills than their older colleagues [7].

Byron E Bork and Thomas M cook [2] found that the job-related tasks most commonly reported as contributing to low back injury were lifting with sudden maximal effort and bending and twisting. He also reported that physical therapists who worked in hospital-based settings had a greater prevalence of work related musculoskeletal symptoms in the low back than did non –hospital based therapists. The greater prevalence of low back symptoms among hospital –based therapists may be attributed to the level of physical dependence of patients [2].

Molumphy *et al.*, reported that 83% of the physical therapists they surveyed were working with a patient when the therapists first experienced low back pain. The most common mechanisms of injury reported by physical therapists was lifting with sudden maximal effort and bending or twisting. Biomechanical investigation has confirmed that lifting and transferring patients generates high spinal stresses. He also reported a similar finding that is, as the age of the physical therapist increased, the percentage of individuals experiencing low back pain for the first time decreased. He found that most respondents first developed symptoms before the age of 30 years and that more than half of these initial episodes occurred within five years of graduation. The authors suggested that the age prevalence trend resulted from physical therapists moving out of patient care as they gained experience and into administrative positions that are less physically demanding [2].

Babatunde OA Adegoke have identified treating a large number of patients in a day and working in the same position for long periods of time, lifting or transferring dependent patients and performing manual therapy techniques as the work factors most commonly found to cause work related musculoskeletal disorders among physical therapists. Mobilization and manipulation have been identified as work factors to the occurrence of upper limb, neck and upper back pain [8].

Glover *et al.*, reported the four most important preventive strategies commonly adopted by physical therapist in response to sustaining musculoskeletal disorder at work as: therapists adjusting plinth or bed height, therapists modifying their position or position of their patient, obtaining assistance when handling heavy

patients and ceasing a patient's treatment if such treatment aggravates or provokes their symptoms [9].

Leah Jane Nyland reports high prevalence of low back pain in younger physiotherapists. The risk of low back pain increased significantly for students once they completed first year. Being aged 20 or 21 (final year students) was significantly associated with all measures of low back pain as compared to youngest students. He found that spending more than 20 hours in the past month '*sitting looking down*' was significantly associated with one-month LBP prevalence. Similar exposure to '*treating patients*' was significantly associated with one-month and one-week LBP prevalence [10].

Holder and *et al.*, [11] listed the regions most commonly involved musculoskeletal injuries as the lower back, hand-wrist, and neck, respectively among physiotherapists. Bork identified the main causes of work related musculoskeletal disorders in physiotherapists as staying in the same position for a long time and continuing to work when tired [12].

Holder *et al.*, [11] found that 79% of physiotherapists and 81% of assistant physiotherapists who had suffered injuries on the job changed their professional attitudes to avoid other work related musculoskeletal disorders. It has been reported that the most common strategies used by physiotherapists to avoid work related musculoskeletal disorders are correction of body mechanics and frequent postural changes [13].

Cromie conducted a study in 2002, examined whether physiotherapists use their own knowledge to prevent work related musculoskeletal disorders. The author found that this was true for most of the physiotherapists investigated [12].

Clemes *et al.*, [14] found a significant link between the implementation of incorrect manual handling techniques and musculoskeletal disorders, predominantly the lower back and lumbar discs. Musculoskeletal disorders have been described as 'the most notorious and common causes of severe long – term pain and physical disability, affecting hundreds millions of people across the world (bone and joint decade)' [15].

In CSP Rules of Professional conduct [16] found that work related musculoskeletal disorders was the leading cause for physiotherapist taking sick leave or early retirement [9]. It was noted the repetitive nature of the job with lifting and transferring patients makes up the main risk factors for work related musculoskeletal disorders. Glover *et al.*, [9] found 68% of the participants of the study suffered a work related

musculoskeletal disorders sometime during their career and as a result 1 in 6 would change speciality or leave the profession. Of the 68% only 16% notified their line manager. It was shown that younger physiotherapists and newly qualified graduates are at most risk with 32% of CSP members injured in the first five years after graduating [17].

Bork *et al.*, [18] Mierzejewski and kumar [19] indicated that injured physiotherapists tended not to take time off work due to their disorders or to seek sick leave or workers compensation. Most therapists treated themselves or sought treatment from a colleague. As a consequences of injury, 18% changed work settings and 12% decreased patient contact time [20].

Diane J west and Dianne Gardner [21] support other research that shows that the onset of work-related injury tends to occur early in a physiotherapist's career. In the long term, injured physiotherapists may change the type of clients they treat and alter their work setting as a consequence of their pain [20].

Bork *et al.*, [18] identified three primary risk factors associated with work related musculoskeletal disorders as repetitious movements, awkward postures and high force levels. In the field of physiotherapy the three primary risk factors are very common because, the nature of therapeutic procedures are often repetitive, labour intensive and involves direct contact with patients. Physical therapists who do not adopt injury-prevention strategies may retire early, move into a new field such as academia, or continue to work with occasional musculoskeletal pain [2].

Lifetime prevalence of work related musculoskeletal disorders (WMSDs) was 91%, and 1 in 6 physical therapists moved within or left the profession as a result of WMSDs [22]. Lifetime prevalence of WRMD was 83%. The highest prevalence of WRMD was in the lower back area (80%) [23].

Salik & Ozcan concluded that Eighty-five percent of the physiotherapists have had a musculoskeletal injury once or more in their lifetime. Injuries have been occurred mostly in low back (26 %), hand-wrist (18 %), shoulders (14 %) and neck (12 %) [24].

Deepak sharan and ajeesh [25] reported that physiotherapists with BMI > 25 were more likely to report Work related musculoskeletal disorders than those with BMI of 18-25. Musculoskeletal outpatients (31%) neurological rehabilitation (14%) and elderly care (12%) were the three major clinical areas producing serious work related musculoskeletal disorders among therapists. Paediatric rehabilitation had

highest prevalence of musculoskeletal disorder of upper back [26].

Bork *et al.*, asserted that physical therapists who applied manual treatment had a work related musculoskeletal disorder risk that was 3.5 times higher than that of those who did not, while Robertson and Spurritt noted that those with moderate to severe symptoms used electrical therapy as a protective behavior. Korean physical therapists widely use manual therapy techniques, but electrical treatment is used the least (5.7%), despite high workrelated musculoskeletal disorders rates [27].

According to Z. Iqbal, A. Alghadir [28] the physiotherapists rank second after nurses with regard to work related low back pain among all health care workers. Female professionals are more prone to develop work related musculoskeletal disorders due to their higher body weight, smaller height and difference in muscle strength and composition. Smaller body builds among females act as a disadvantage when lifting or transferring patients and equipments; and applying body force during treatment, putting extra load on their body, especially spine [28].

Waters and Rockefeller have differentiated between patient handling tasks classified as "traditional" and those classified as "therapeutic" in a rehabilitation setting. Therapeutic tasks are designed to improve a patient's physical function and independence, whereas traditional tasks are designed to only offer a patient the needed help. Therefore, therapeutic tasks constitute a greater risk of musculoskeletal pain to the therapist since they require staying in an awkward position for long periods of time, thus, causing higher cumulative mechanical loads on the spine [29].

METHODOLOGY

The research population was selected physical therapists who were employed in a Liaquat National Hospital, Agha Khan University, Ziauddin hospital and National Medical Centre. All data were collected through questionnaire (that consisted of 12 close-ended questions). Each member was asked to complete the self-administered questionnaire if they had more than 1 years of experience in practice. Ninety questionnaires were analyzed (total response rate 90%, for women 55%, for men 35%). The questionnaire was composed of two parts, demographic and occupational. The demographic portion asked about general characteristics, including sex, age, weight, and height, years of experience, work setting, and number of hours of contact with patients per week. This occupational portion inquired about whether the subject had experienced any work related back pain. If the answer was yes, the person was asked to state the type of

injury, the part of back affected, specific activities caused on occupational injury, the work setting in which the injury occurred, whether the injury was reported or a physician was consulted. They were also asked whether they lost work time as a result of the injury, what activities caused symptoms to recur, and whether the injury had caused the respondent to alter his or her work habits, reduce hours with patients, or change employment settings.

Data were analyzed using SPSS 17.0 for Windows for the general information items were expressed as mean \pm standard deviation, and results for items in the occupational portion were expressed as percentages. χ^2 were used to analyze influence personal characteristics (sex, age, number of years in physiotherapy practice, number of hours per week in direct patient care) to back pain due to work.

RESULTS

The results showed that there were 55 females and 35 males physical therapists. The percentage of physical therapists according to gender is presented in Graph-1. The frequency distribution is presented in Table-1.

The overall mean age of study subjects was 28.50 years, with range of 25 (22 – 47) years. The distribution of age is presented in Graph-2, frequency of physical therapist belonged to age groups are presented in Graph-3. The detailed descriptive statistics is presented in Table-2.

The questionnaire answers indicated that the respondents spent an average of 8.21 hours per day in direct patient care and had 5.21 years of work experience on average.

Among all 90 physical therapists, 85 physical therapists had back pain due to work within last 1 year. The frequency is presented in Graph-4 and frequency distribution is presented in Table-3.

Chi square test was applied to see the association between back pain due to work with age, gender, number of years in physiotherapy practice and number of hours per day in direct patient care. P value \leq was considered as significant. The result showed that there was no significant association of back pain due to work was observed with age ($p=0.466$), gender ($p=1.000$), number of years in physiotherapy practice ($p=0.791$) and number of hours per day in direct patient care ($p=1.000$). The detailed results are presented in Table-4.

The lower back (lumbar / sacral) was the part of back with the highest frequency of occupational injury (70%) and upper back (25.6%), low back

radiating to leg (6.5%) and gluteal region (5.6%) were other sites frequently affected (Table-5).

Among all physical therapists, 43% physical therapists had complained mild back pain, 41.9% physical therapists had complained moderate back pain and 6.5% physical therapists had complained severe back pain. The percentage of severity of back pain due to work is presented in Graph-5. Stratification was done to see the association of severity of pain with age group and with duty hours. Post stratification chi square test was applied considering p value ≤ 0.05 as significant. No significant association of severity of back pain was found with age group ($p=0.767$) and with duty hours ($p=0.394$). The detailed results are presented in Table-6.

The main types of injury reported were muscle strain (84.4%), vertebral disc involvement (6.7%), neuropathy (2.2%) and ligament sprain (1.1%). The frequencies are presented in Graph-6.

Chi square test was applied to see the association between cause of pain and duty hour. P value ≤ 0.05 was considered as significant. No significant association of cause of pain was found with duty hours ($P=0.893$). The detailed results are presented in Table-7.

Chi square test was applied to see the association between among all the causes of pain with severity of pain. P value ≤ 0.05 was considered as significant. The results showed significant association of severity of pain was observed with cause of pain. The detailed results are presented in Table-8.

The factors that most frequently led to back pain due to work in physical therapists were lifting / transferring a patient (32), maintaining a position for a prolonged period of time (22), working when physically fatigued (22), bending / twisting (17), performing repetitive tasks (12). The detailed results are presented in Table-9.

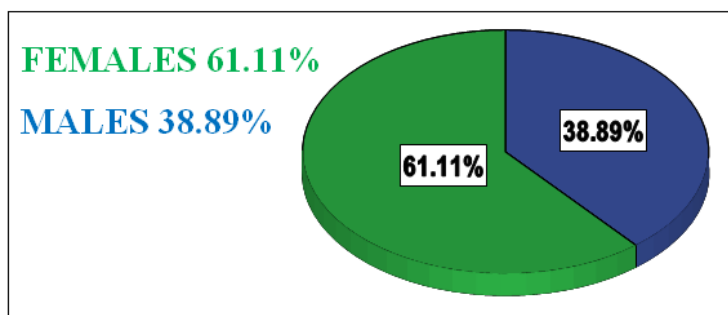
The physical therapists who had back pain due to work were working in hospitals (51), out patient facility (16), patient's home (11), rehabilitation centre (7). The frequencies are presented in Graph-7. The frequencies distribution are presented in table-10.

Chi square test was applied to see the association between the causes of pain with treating a large number of patients in a day. P value ≤ 0.05 was considered as significant. The results showed significant association of causes of pain was observed with treating a large number of patients in a day (P value 0.000). The detailed results are presented in Table-11.

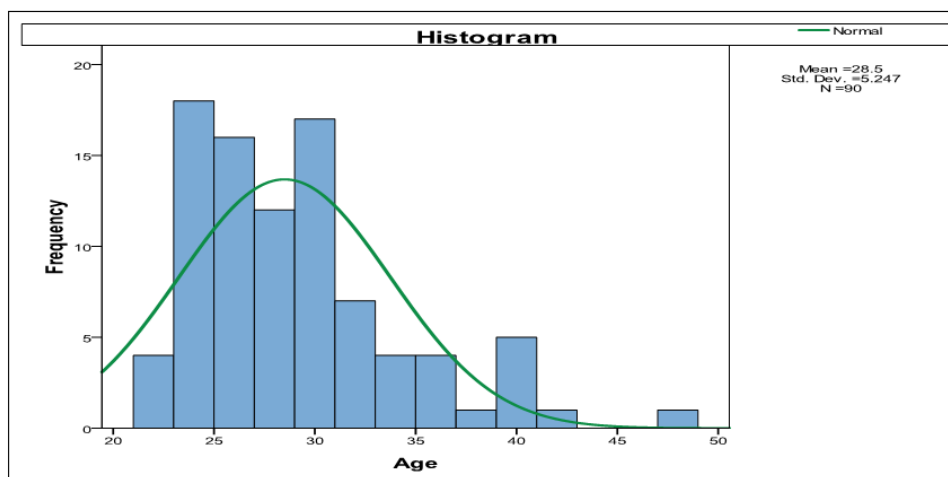
Twenty-two percent of the respondents with back pain due to work had visited a physician for the problem and twenty- eight percent had lose a half day or more from work as a result of back pain.

The respondents who had experienced a back pain due to work indicated that lifting/transferring a

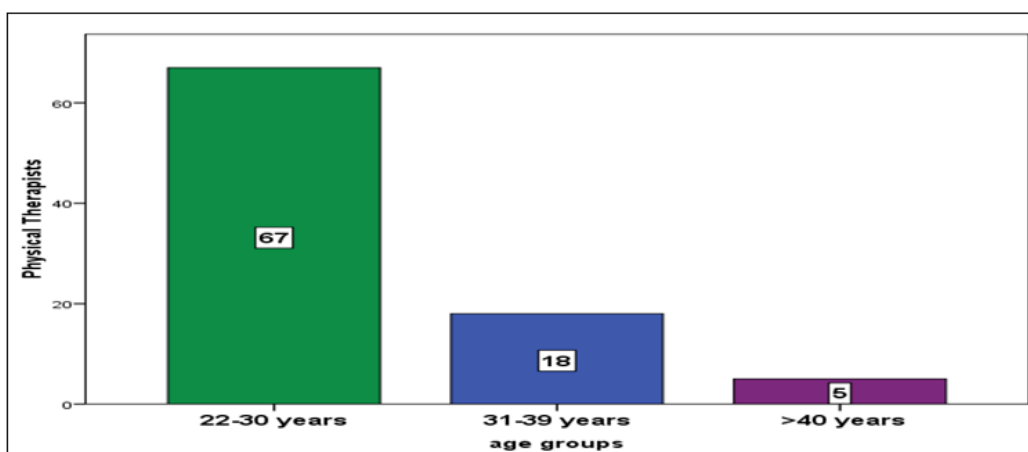
patient (34.4%), performing repetitive tasks(23.7%), bending/twisting(19.4%), walking/climbing stairs(3.2%) and squatting(1.1%) were the activities that most often exacerbated their symptoms during clinical practice (Table 12).



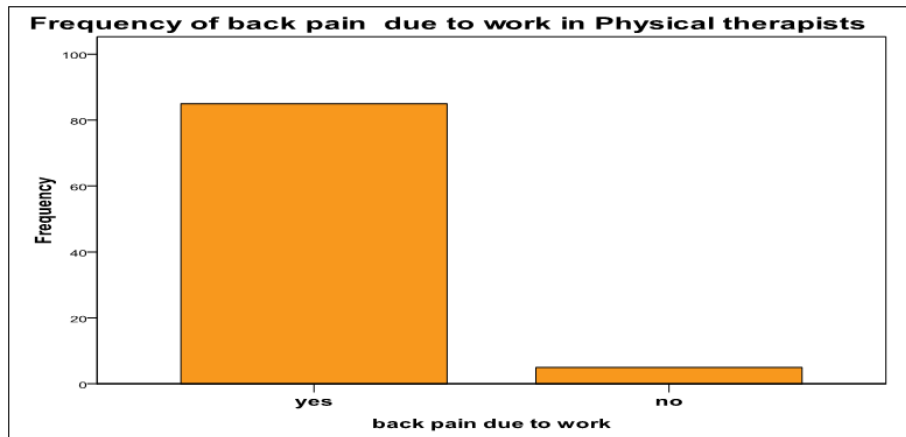
Graph-1: Percentage of Physical Therapists According to Gender



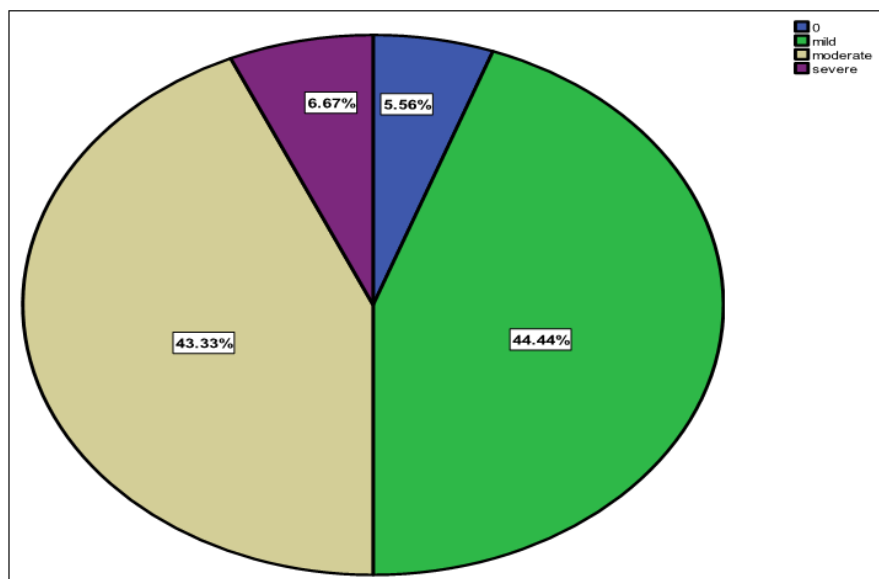
Graph-2: Histogram Presenting Distribution of AGE (years)



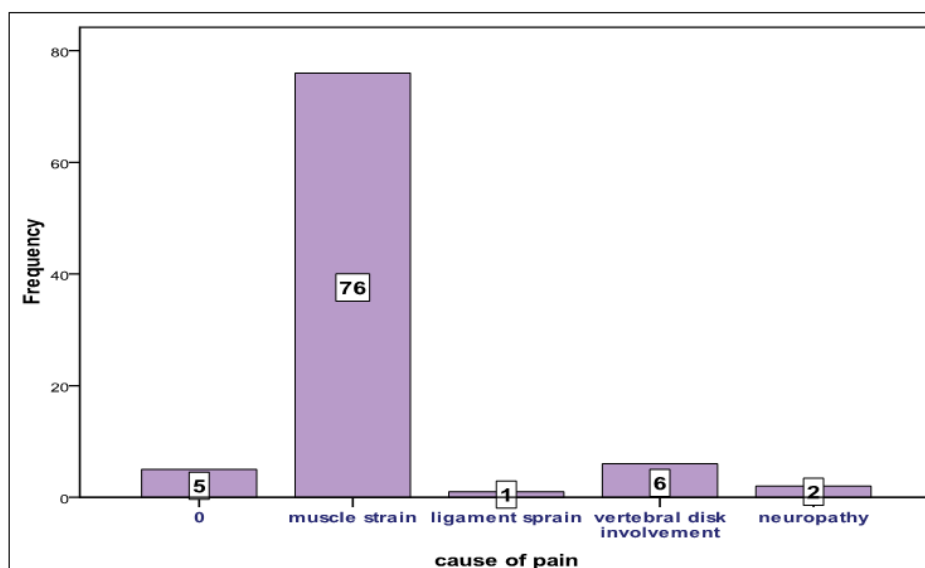
Graph-3: Frequency of Physical Therapists according to the Age group



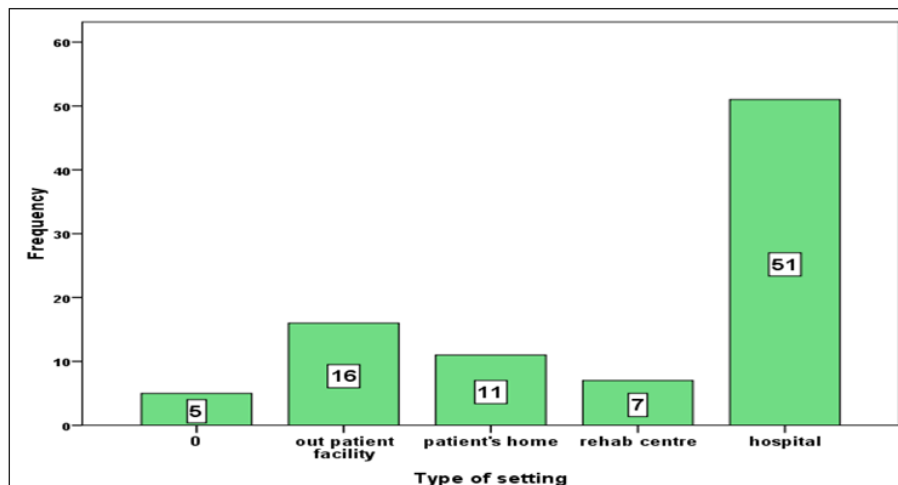
Graph-4: Bar chart Presenting Frequency of Back Pain due to Work



Graph-5: Frequency Presenting Severity of back pain



Graph-6: Frequency Presenting Causes of Pain among Physical Therapists



Graph-7: Frequency Presenting Work Setting Of Injured Physical Therapists

Table-1: Frequency Distribution of Gender

	FREQUENCY (N)	PERCENTAGE (%)
MALE	35	38.9
FEMALE	55	61.1
TOTAL	90	100

Table-2: Descriptive Statistics of AGE

	AGE (YEARS)
MEAN \pm S.D	28.50 \pm 5.247
95% CL (LB-UB)	27.40-29.60
MEDIAN (IQR)	27.50(6)
MAX- MIN	47-22
RANGE	25

Table-3: Frequency Distribution of Back Pain Due To Work

	FREQUENCY(N)	PERCENTAGE (%)
YES	85	94.4
NO	5	5.6
TOTAL	90	100

Table-4: Frequency & Association of Back Pain with Age, Gender, Number of years of Physiotherapy in Practice and Number of hours per day

BACK PAIN DUE TO WORK		
GENDER MALE(35) FEMALE(55)	YES=33, NO=2 YES=52, NO=3	P-VALUE 1.000**
AGE GROUP 22-30 YEARS 31-39YEARS >40YEARS	YES=64, NO=3 YES=16, NO=2 YES=5, NO=0	0.466**
YEARS OF EXPERIENCE <5 5-10 >10	YES=5, NO=3 YES=23, NO=2 YES=9, NO=0	0.791**
DUTY HOURS <8 >8	YES=63, NO=4 YES=22, NO=1	1.000**

Chi square test was applied.

P-value ≤ 0.05 considered as significant

** Not Significant

Table-5: Frequency Distribution of Part of Back

	FREQUENCY(N)	PERCENTAGE (%)
UPPER BACK		
YES	23	25.6
NO	62	68.9
LOWER BACK		
YES	63	70.0
NO	22	24.4
GLUTEAL REGION		
YES	5	5.6
NO	80	80.9
LOW BACK RADIATING TO LEG		
YES	6	6.7
NO	79	87.8

Table-6: Association of Severity of Back Pain with Age Group & Duty Hours

SEVERITY OF BACK PAIN					
	0	MILD	MODERATE	SEVERE	P- VALUE
AGE GROUP					
22-30 YEARS	3	30	30	4	0.767**
31-39 YEARS	2	8	6	2	
>40 YEARS	0	2	3	0	
DUTY HOURS					
<8	4	33	26	4	0.394**
>8	1	17	13	2	

Chi square test was applied.

P-value ≤ 0.05 considered as significant

** Not Significant

Table-7: Association of Causes of Pain with Duty Hours

		causes of pain				P-value
	0	muscle strain	ligament sprain	vertebral disk involvement	neuropathy	
Duty Hours						
< 8	4	56	1	5	1	0.893**
> 8	1	20	0	1	1	

Chi square test was applied.

P-value ≤ 0.05 considered as significant

** Not Significant

Table-8: Association of Causes of Pain with Severity of Pain

		cause of pain				P-Value
	0	muscle strain	ligament sprain	vertebral disk involvement	neuropathy	
SeverityOf Pain						
0	5	0	0	0	0	0.000*
mild	0	40	0	0	0	
moderate	0	34	1	3	1	
severe	0	2	0	3	1	

Chi square test was applied.

P-value ≤ 0.05 considered as significant

* Significant

Table-9: Frequency Distribution of Activities Which Causes Back Pain

	FREQUENCY (N)	PERCENTAGE (%)
LIFTING/TRANSFERRING A PATIENT	YES =32 NO =53	35.5% 58.8%
MAINTAINING A POSITION FOR A PROLONGED PERIOD OF TIME	YES=22 NO=63	24.4% 70%
BENDING/TWISTING	YES=17 NO=68	18.8% 75.5%
PERFORMING REPETITIVE TASKS	YES=12 NO=73	13.3% 81.1%
WORKING WHEN PHYSICALLY FATIGUED	YES=22 NO=63	24.4% 70%

Table-10: Frequency Distribution of Types of Setting

	FREQUENCY (N)	PERCENTAGE (%)
OUT PATIENT FACILITY	16	17.8
PATIENT'S HOME	11	12.2
REHABILITATION CENTRE	7	7.8
HOSPITAL	51	56.7

Table-11: Association of Large Number of Patients with Causes Of Pain

CONTRIBUTION OF LARGE NUMBER OF PATIENTS		
CAUSES OF PAIN	YES	NO
0	0	0
MUSCLE STRAIN	64	12
LIGAMENT SPRAIN	0	1
VERTEBRAL DISK INVOLVEMENT	4	2
NEUROPATHY	2	0
P-VALUE	0.000*	

Chi square test was applied.

P-value ≤ 0.05 considered as significant

* Significant

Table-12: Frequency Distribution of Activities Exacerbated Back pain

	FREQUENCY (N)	PERCENTAGE (%)
LIFTING/TRANSFERRING A PATIENT	YES =32 NO =53	34.4% 57%
BENDING/TWISTING	YES=18 NO=67	19.4% 72%
PERFORMING REPETITIVE TASKS	YES=22 NO=63	23.7% 67.7%
SQUATTING	YES=1 NO=84	1.1% 93.3%
WALKING/CLIMBING STAIRS	YES=3 NO=82	3.2% 88.2%

DISCUSSION

The discussion is based on the findings from the data that was obtained from 90 physiotherapy personnel that took part in the study. The aim of this study was to determine the prevalence of back pain among physiotherapy personnel in Karachi.

Information that was obtained from this study indicates that work related back pain were common. Ninety four (94.4%) respondents reported having experienced work-related back pain. This result is similar to the reported prevalence of 91.3% in Nigeria [8]. Cromie [22] reported that 91% of respondents had experienced work related pain or discomfort at some time. However, it is lower compared to the reported

prevalences of WRMDs among physiotherapists in the African region and in Zimbabwe it was 78% Useh *et al.*, [30]. The differences in the results may be attributed to differences in the number of participants. Also, the range of conditions, number of patients attended to per day, the set up of the practice and the availability of basic equipment may influence the development of work related musculoskeletal disorders.

The lower back was the most commonly affected body part at 70% (n =63) in this study. These findings are consistent with the results of previous studies in the African region and elsewhere that implicated the lower back as the most commonly affected anatomical area among physical therapists that ranging between 45% and 79.6% [31-34, 30]. 41% Physical therapists reported that the low back injury was the injury that had had the greatest impact on their career [22].

These results are also correlated to the daily treatment tasks being performed by physical therapists contribute to stress in these anatomical areas, such as treating a large number of patients per day, lifting or transferring of dependant patients, working in the same position for a long period, doing the same task over and over and performing manual therapy techniques. Also, most of the practice settings are general hospitals.

Patients in these facilities are usually, very ill because of complications associated with stroke and other neurological conditions and orthopediac cases and the number of patients attended to per day is quite high thereby, increases on staff demand.

Majority of respondents 59% (n=53) noted having experienced their first episodes of back pain during the first five years of professional practice. These outcomes are very similar to those reported in most of the other studies done on work related musculoskeletal disorders among physiotherapists [32, 8, 35, 9, 24]. This according to [9], is attributed to newly qualified staff being inexperienced in handling patients and reluctant or embarrassed in seeking assistance from colleagues when doing physically demanding tasks. Furthermore, newly qualified staff may not have yet developed strategies for coping with the physical demands of the job.

This study found that being aged 22 -30 years (n=64) was a significant contributor to low back pain prevalence. This is similar to the previous studies on work related musculoskeletal disorders among physical therapists [8] revealed high prevalences of musculoskeletal symptoms among younger physical

therapists (30 years and below) which was attributed to inexperience.

Adegoke *et al.*, [8] in a study on the prevalence and work factors of work related musculoskeletal disorders among physiotherapists in Nigeria, cited bedevilled unwholesome work settings, under staffing and lack of appropriate and basic equipment as some of the conditions that predisposed physical therapists to work related musculoskeletal disorders. It was therefore, an assumption in this study that work load because of high patient turnover could expose physiotherapy personnel to back pain. It was also an assumption that physiotherapy personnel that had basic equipment and adequate staffing levels in their departments would have lower incidences of WRMDs.

However, outcomes in the present study show that there were no statistically significant between back pain and duty hours. Treating a large number of patients per day, lifting / transferring a patient, and working in the same position for a long period, working when physically fatigued in this order, are across cutting job tasks or work factors that respondents in the present study commonly identified as contributing to the development of back pain. In previous studies investigations revealed some what similar results [31, 35, 9, 24].

LIMITATIONS FOR THE STUDY

The main limitation of this study is the convenient sampling technique that was used. Only personnel who were present at the time of data collection took part in the study. The number of Physical therapists who were not present at the time of data collection had a negative effect on the population as it was already restrictive. To this effect, there was no generalization of results even though similar scenarios were expected in other parts of the country.

CONCLUSION

The Physiotherapists who treat patients and give physiotherapy services for curing different musculoskeletal disorders are themselves prone to develop different musculoskeletal injuries (mainly low back pain). It is important to adopt prevention strategies by using ergonomically designed equipments like suspension frames, sliding boards, sit to stand frames, sliding sheets, sling lifts, height adjustable beds. Proper techniques of carrying and lifting need to be emphasized during training of the therapists so that they can use their body force efficiently and effectively without putting extra load on their spines. Onset of symptoms for the majority was first five to ten years of practices.

Appendix 1:

I am working at Liaquat National Hospital as a physical therapist. I am doing research on prevalence of back pain among physical therapists, which is a very common problem. I want a permission to collect the information from the physical therapist of your reputable hospital. Identification of participant will be confidential.

If you are agree to participate, please sign your name below

Head of department's signature _____

Date: _____

Appendix II:

PREVELANCE OF BACK PAIN AMONG PHYSICAL THERAPISTS IN KARACHI-PAKISTAN

SECTION A (DEMOGRAPHICS)

- 1- NAME _____
- 2- CONTACT NO _____
- 3- GENDER male ☐ female ☐
- 4- AGE _____ HEIGHT _____ WEIGHT _____ KG/lbs
- 5- Professional Experience _____
- 6- Hospital/ Clinic _____
- 7- How many hours in a typical work week do you devote to direct patient care _____

SECTION B (WORK-RELATED QUESTIONS)

- 1- Have you felt any back pain due to your work within the last one year?
 - a) Yes
 - b) No
- 2- What part of back was affected?
 - a) Upper back (thoracic)
 - b) Lower back (lumbar/ sacral)
 - c) Gluteal region
 - d) Low back radiating to leg
- 3- How bad was your pain in the past three months?
 - a) Mild
 - b) Moderate
 - c) Severe
- 4- What was the cause of pain?
 - a) Muscle strain
 - b) Ligament sprain
 - c) Vertebral disk involvement
 - d) Neuropathy
 - e) Degeneration or others _____
- 5- What activity were you doing when you felt back pain first time?
 - a) Lifting/ transferring a patient
 - b) Maintaining a position for a prolonged period of time
 - c) Bending/ twisting
 - d) Performing repetitive tasks
 - e) Working when physically fatigued
- 6- In what type of setting did the back pain occur?
 - a) Out patient facility
 - b) Patient's home (home care)
 - c) Rehabilitation centre
 - d) Hospital
- 7- Do you think that treating large number of patients in a day is contributing to your pain?
 - a) Yes
 - b) No
- 8- Did you see a physician for the back pain?
 - a) Yes
 - b) No

9-Did you lose a half day or more from work as a result of the back pain?

- a) Yes
- b) No

10-Since your back pain, have your symptoms been exacerbated by clinical practice?

- a) Yes
- b) No

If yes, what activities cause you symptoms to recur?

- a) Lifting/ transferring a patient
- b) Bending / twisting
- c) Performing repetitive tasks
- d) Squatting
- e) Walking /climbing stairs

11-Has the back pain caused you to alter your work habits?

- a) Yes
- b) No

If yes, what do you do differently?

- a) Avoid lifting.
- b) Change working position frequently.
- c) Decrease patient care time.
- d) Increase use of mechanical aids or other personnel.
- e) Change the area of practice to avoid sustaining another injury.

12-Are you considering changing job because of this back pain or risk of another injury?

- a) Yes
- b) No

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