

PREVALENCE OF LOW BACK PAIN IN HOME-BASED PHYSICAL THERAPISTS

ABSTRACT

BACKGROUND

To find out the prevalence and to highlight the risk factors of low back pain in home-based physical therapist.

STUDY DESIGN AND SAMPLING TECHNIQUE

A cross-sectional survey study with non-probability convenience sampling technique

STUDY SETTING AND PARTICIPANTS

200 physical therapists that were doing home patients in Karachi, either without or with their jobs were the part of this study. They were either self-employed or affiliated to different hospitals..

DATA COLLECTING TOOL AND DATA ANALYSIS

A questionnaire was used to collect data, which was adopted from Nordic questionnaire and other researches. The collected data was analyzed on SPSS 20.

RESULTS

93 % home-based physical therapists had experienced the work related pain or discomfort in the last 12 months. Among them the low back is the highly affected site with prevalence of 81.5%. Their working status of job in physical therapy department or academics with home-based physical therapy had a significant difference in presence or absence of work related pain or discomfort.

CONCLUSION

This study shows that home-based physical therapists are more prone to develop work-related problems and had higher prevalence of work-related LBP. This may be due to more work load, lower bed height of home patients, poor ergonomics at homes of patients and poor posture of physical therapists.

Key Words

Home-based Physical Therapists, Home-based Physical Therapy Services, Work-related Low Back Pain, Work-related Musculoskeletal Pain Or Discomfort, Home Visits, Physical Therapy Departments, Ergonomics.

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INTRODUCTION

Musculoskeletal disorders (MSDs) are common worldwide. Among them, work-related MSDs are very important. Risk factors associated with work place play a major role in development of work-related MSDs of different body areas^{1,2}. The personal, psychosocial, physical and ergonomic factors are associated with them. Researches focused many fields of work to find out its occurrence in that work and many found Low Back as the most common affected site. Low back pain (LBP) is a very common health issue of general population as well as populace of every profession, including health care providers^{3,4}. 62-80% of general population suffers from this agony in their lives³. Both men and women are affected evenly. However variation occurs in the age of both genders. It occurs mostly in men at an average age of 40, and more in elder women³. In industrial population, LBP results in loss of work time, disability either temporary or permanent³. LBP leads to absenteeism from work⁴. Ultimately, these organizations have more losses due to increased absenteeism, turn over and decreased productivity. Other than industrial workers it is also common in nurses, varying with age, length of employment, handling techniques⁵.

Studies conducted to find out the prevalence of work-related musculoskeletal problems in nurses, surgeons and doctors, revealed LBP as 46.8% in nurses, 68.1% in surgeons and 36.84% in doctors⁵⁻¹⁰.

Among the health care providers, physical therapists are also prone to develop different work-related musculoskeletal problems, including low back pain^{3,4,11-25}. Similar work has been done by Siqueira GR et al. who found that 78.58% physical therapist in the city of Recife, Brazil had complaint of LBP⁴. Babatunde OA et al. also reported 91.3% prevalence of Work-related musculoskeletal disorders among Nigerian Physiotherapists. In this study 69.8% has the involvement of low back was and 34.1% had neck involvement.

50% Physiotherapists had this agony within 5 years of graduation and 61.7% were below 30 years of age¹⁶. Budhadev Neeti P found the 69% physiotherapists had WRMDs and 35% has this at low back²⁵. Glover found that 68% members of the Chartered Society of Physiotherapy (CSP) had work-related musculoskeletal disorders. Among them, 58% had this in last 12 months and 42% had symptoms for more than three days. 44% had problem in low back¹¹.

Various studies have shown the prevalence of low back pain and WRMD among foreign population but this study has focused only those physical therapists that provide home-based physical therapy services, either with or without their separate job. This study is aimed to find out the prevalence and to highlight the risk factors of low back pain in home-based physical therapist. To best of my knowledge, there is no data available about the prevalence of low back pain among home-based physical therapist of our population.

METHODOLOGY

Study Design

This study was a cross-sectional survey study.

Sampling Technique

Convenience Non-probability Sampling technique was used to collect data.

Study Setting and Participants

The data was collected from 200 physical therapists. Physical therapists that were doing home patients in Karachi, either without or with their jobs were the part of this study. They were either self-employed or affiliated to different hospitals.

Study Duration

Six month.

Inclusion and Exclusion Criteria

Both male and female physical therapists of age 25-60 years, providing home-based physical therapy services to patients were included in the study. Physical therapists who did not want to participate were excluded from this data.

Data Collecting Tool

A questionnaire was used to collect data. The questionnaire consists of questions about general information of age, gender, working status, work load, years of working, works other home-based therapy, number of home patients, and details about low back problems. Questions of this questionnaire were adopted from Nordic questionnaire and other researches^{16, 18,21,26,27}.

Ethical Consideration

Before filling the questionnaire, study was explained to

Table 1: General information of home-based physiotherapists		
Characteristics	Mean (SD)	Range
Age (yrs)	34.27 (5.29)	26-52
Height (m)	1.62 (0.09)	1.46-1.80
Weight (kg)	69.96 (7.9)	48-96
Years of PT Experience (yrs)	9.27 (5.29)	1-27
Characteristics	n (%)	
Gender:		
● Females	9 (4.5%)	
● Males	191 (95.5%)	
Working Status:		
● Only Home-based Physical therapy	7 (3.5%)	
● Home-based Physical therapy with other job	193 (96.5%)	

them and written consent was taken. Their personal information was kept confidential.

Data Analysis

The collected data was analyzed on SPSS 20. General information about socio-demographic characteristics were shown in Mean (Standard Deviation) and percentages. The descriptive and occupational characteristics were shown in percentages, Fisher's exact tests and Chi-square statistics.

RESULT

Two hundred home-based physical therapists filled the questionnaire, with mean age of 34.27 ± 5.29 years, ranging from 26 to 52 years. Among them 9(4.5%) were females and 191 (95.5%) were males. Their average years of Physical therapy experience were 9.27 ± 5.29 years, ranging from 1 to 27 years. General information of physical therapists that were doing home-visits is shown in Table 1.

When inquired about the job routine of 200 physical therapists, 7 (3.5%) physical therapists responded that they were doing home visits only and 193 (96.5%) physical therapists responded that they were doing home visits with their jobs (as physiotherapist or in academics). Among these 193 physical therapists who were doing a job with home visits, 176 (91.2%) were working in physical therapy departments, while 17 (8.8%) were working in academic side. The distribution of working status in the genders is shown in Table 2.

When asked about the means of transport for home visits, the majority 97.9% male physical therapists mentioned the use of motor cycle for travelling. When they were asked about their opinion of mostly available bed height to give treatment in homes, 196 (98%) physical therapists responded that they never found the correct height of bed for themselves and they worked with that height too.

Table 2: Working status with their jobs and gender wise distribution.

Characteristics	n (%)	Females n (%)	Males n (%)
Total	200	9	191
<u>Working Status:</u>			
• Only Home- based Physical therapy	7 (3.5)	1 (14.29)	6 (85.71)
• Home-based Physical therapy with other job, in:	193 (96.5)	8 (4.15)	185 (95.85)
- PT department	176 (91.2)	5 (2.84)	171 (97.16)
- Academics	17 (8.8)	3(17.65)	14(82.35)

Table 3: Work related musculoskeletal pain or discomfort (WRMD) with Characteristics

Characteristics	Total n	WRMD n (%)	No WRMD n (%)	Statistics
Total	200	186 (93 %)	14 (7 %)	
Age (yrs):				$\chi^2 = 0.408$ P= 0.58
• ≤ 30	73	69 (94.52)	4 (5.48)	
• > 30	127	117 (92.13)	10 (7.87)	
Years of PT Experience (yrs):				$\chi^2 = 1.93$ P= 0.38
• 1 - 5	76	70 (92.11)	6 (7.89)	
• 6 - 15	111	105 (94.59)	6 (5.41)	
• ≥16	13	11 (84.62)	2 (15.38)	
Gender:				$\chi^2 = 3.35$ P= 0.12
• Female	9	7 (77.78)	2 (22.22)	
• Male	191	179 (93.72)	12 (6.28)	
Working Status:				$\chi^2 = 5.185$ P=0.078
• Only Home- based Physical therapy	7	5 (71.43)	2 (28.57)	
• Home-based Physical therapy with other job	193	181 (93.78)	12 (6.22)	
Working Status of Home-based Physical therapy with other job in:				$\chi^2 = 17.199$ P= 0.0016
• PT department	176	169 (96.02)	7 (3.98)	
• Academics	17	12 (70.59)	5 (29.41)	

Table 4: Frequency of WRMD in females and males with working status

Characteristics	Total	Females			Males		
		Total	WRMD	No WRMD	Total	WRMD	No WRMD
		n	N	N	N	n	N
Total	200	9	7	2	191	179	12
Working Status:							
• Only Home- based Physical therapy	7	1	1	0	6	4	2
• Home-based Physical therapy with other job, in:	193	8	6	2	185	175	10
- PT department	176	5	5	0	171	164	7
- Academics	17	3	1	2	14	11	3

Remaining 2% physical therapists told that they worked on only that bed height which suits them by making adjustments, when they not found the correct bed height. Out of 200 physical therapists, 64 (32%) told that the height of bed of their most of home patients were at the level of their knee, 133 (66.5%) reported it between the knee and hip.

It is found that 186 (93 %) from 200 physical therapists had experienced the work related pain or discomfort in the last 12 months. Their characteristics with presence or absence of any work related pain or discomfort is shown in Table 3. Their working status of job in physical therapy department or academics with home-based physical absence of work related musculoskeletal pain or discomfort (WRMD). Table 4 showed the frequency of Work related musculoskeletal pain or discomfort (WRMD) in females and males with working status.

Among the 186 physical therapists who had experienced work related musculoskeletal pain or discomfort in the last 12 months, 81.5 % reported the low back as the most vulnerable area where neck (34.5%), shoulder/arm (22%) and other regions/sites were also reported (Table 5).

Table 5: Work - related musculoskeletal problems at highly affected sites with their percentages

Sites	n	%
Low back	163	81.5
Neck	69	34.5
Shoulder / arm	44	22
Wrist/ hand	31	15.5
Knee	28	14
Upper back	27	13.5
Hip /thigh	14	7
Elbow	7	3.5
Ankle/feet	5	2.5

Regarding the onset of low back pain (LBP), 141 (86.5%) physical therapists had gradual onset, while 21 (12.88%) had sudden. 1 (0.61%) had accident which caused LBP (Table 6).

When asked about parting of their home-based physical therapy services, 144 (88.34%) out of 163 had not left the home-based physiotherapy, while 19 prevented them for 1-7 days from doing their normal work. 52 (31.9%) had changed or modified their treatment techniques for patients (Table 7).

The prevalence of work-related musculoskeletal problems at highly affected sites with their percentages from three different studies is shown in the table 8^{16,18,25}.

Table 6: Onset of Work- related Low Back Pain (LBP) in home-based physical therapists

Onset of LBP	n	%
LBP (n=163)		
Gradual	141	86.50
Sudden	21	12.88
Accident	1	0.61

Table 7: Outcome of Work-related Low Back Pain (LBP) in home-based physical therapists

Outcomes of LBP	N	%
LBP (n=163)		
Not left the home-based physiotherapy	144	88.34
Left temporarily the home-based physiotherapy	19	11.66
LBP prevented them from doing their normal work for 1-7 days	81	49.69
Changed or modified their treatment technique	52	31.9

Table 8: Prevalence of Work-related musculoskeletal problems at highly affected sites with their percentages from different studies

Sites	Nizami GN et al		Adegoke et al		D. Rugelj		Buddhadev et al	
	n (200)	%	n (126)	%	n (133)	%	n (20)	%
Low back	163	81.5	88	69.8	98	73.3	7	35
Neck	69	34.5	43	31.1	26	19.5	5	25
Shoulder/ arm	44	22	28	22.2	20	15	3	15
Wrist/ hand	31	15.5	26	20.6	20	15	1	5
Knee	28	14	20	15.9	18	13.5	-	-
Upper Back	27	13.5	18	14.3	8	6	3	15
Hip / thigh	14	7	8	6.3	8	6	-	-
Elbow	7	3.5	7	5.6	3	2.3	1	5
Ankle/ feet	5	2.5	12	9.5	3	2.3	-	-

DISCUSSION

Higher intensity of physical work with poor ergonomics leads to Low back pain (LBP). Physical workers with improper lifting and carrying, and poor postures will develop LBP and other problems.

Lifting and carrying techniques with its frequency, amount of load, time spend in a static posture or activity, bending, reaching, work load, vibration, work-place and many other factors with age and sex are important for work-related musculoskeletal disorders including LBP. Many researches focused to find the prevalence, incidence, causes and risk factors of low back pain and to find the preventive measures for work-related low back pain.

Numerous studies have shown the high prevalence of low back pain among physical therapists of foreign population. Most of the home-based physical therapist of our population treat patients in physical therapy departments and/or involve in academic activities during their job hours. They provide home-based services privately before or after their job duties, which ultimately increase the work load on them. Most of the patients who take therapy at home are bed ridden or dependent. Physical therapists mostly compromise with the ergonomic factors, especially bed height. For comparison no data is available about work-related problems of home-based physical therapist of our population.

This study has shown that home-based physical therapists had more work-related low back pain (93%) than result of other studies. In other studies, the Prevalence of Low back pain was found 44% in members of the Chartered Society of Physiotherapy (CSP) by Glover et al¹¹, 78.58% by Siqueira GR et al in physical therapist of Brazil⁴, 73.7% in physical therapists by Rugelj D¹⁸, 45% in physical therapists by Bork et al²⁰, 26 % in physical therapists of Izmir-Turkey by Salik Y et al²¹, 69.8% in Nigerian physical therapists by Babatunde OA et al¹⁶, 70% in physical therapists (61.8% in males, 74.2% in females) by Shehab D²⁴, 29% in physical therapists by Molumphy et al³, 62% in physical therapists and 56% in physical therapy assistants by Holder NL et al¹⁵, 46.8% in nurses by Dehlin O et al⁶, 68.1% in surgeons by Grace et al⁹, 36.84% Salvi Shah & Beena Dave in doctors of Surat¹⁰. Naude, Benita found 47% point prevalence for LBP in nurses⁸.

Cromie JE et al studied the attitudes and beliefs of thera-

therapists that had WRMD and also found 91% life time prevalence of WMSD^{22,23}. Scholey et al studied Back pain in physiotherapists involved in back care education¹⁹. West DJ et al studied occupational injuries of physiotherapists in North and Central Queensland, found that 55% physiotherapists had work-related injury, primarily of low back, hands and neck¹⁷. Among them 56% initial episodes were within 5 years of graduation. After occupational injury, 38% therapists had changed their work setting, while most had changed their techniques¹⁷.

Comparison of this study with three studies in detail is shown in the table 8^{16,18,25}. These three studies were done on physical therapists working in physiotherapy departments. As my study is based on home-based physical therapist which did home-patients with or without their job duties, may be due to this reason the prevalence of work-related problems are higher than these studies. Buddhadev Neeti et al found that 20 (69%) out of 29 physical therapists had developed WRMD and 35% had LBP²⁵, which is a very low value than other studies and may be due to less sample size.

Physical therapists having work-related problems, especially the LBP thought that lower bed height, poor ergonomics in patients' home and their poor posture due to it, were the main reasons of their low back pain and other problems.

There could be one more reason that physical therapists have to treat more patients. They try to save the time by avoiding the ergonomics and by ignoring their own health, which will also prone to develop work-related problems.

Male physical therapists are doing predominantly more home visits than female physical therapists in our population. Females have many casual factors of LBP including pregnancy, number of deliveries etc. Among the data from these 9 female physical therapists, it is difficult to say that cause of LBP was totally related to home visits or not.

Guidelines to prevent and manage low back pain at work place are established and available. If the guidelines and proper ergonomics are followed, then physical therapists can decrease the risk of low back pain and eventually its outcomes²⁸⁻³⁰.

CONCLUSION

This study shows that home-based physical therapists are more prone to develop work-related problems and had higher prevalence of work-related LBP. This may be due to more work load, lower bed height of home patients, poor ergonomics at homes of patients and poor posture of physical therapists.

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