

Prevalence & Demographic Study of Work – related musculoskeletal disorders among physiotherapists of Karachi

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Abstract—

Background:

Professionals who work are at risk of musculoskeletal disorders. Physiotherapy practices are very prone to develop work related musculoskeletal disorders. In Karachi Pakistan, many Physiotherapists were also suffered from these musculoskeletal disorders& till yet it had not been reported.

Objective:

The objective of the study was to determine the overall prevalence of work related injuries among physiotherapists & to study the certain demographic variables which were related to their profession.

Methodology:

For this, a cross-sectional study was conducted among the physiotherapists of Karachi for duration of 6 months. For this, a modified Adegoke et al 2008 Questionnaire had been designed & study was conducted at major Hospitals, Clinics, and Rehabilitation Centers of Karachi. Physiotherapists had participated in the study regardless of gender, age group (up to 45 years), experience, designation, and mode of Job, type of work and location of Job.

Results

The females had participated more as compare to males. The overall prevalence had found about 79% in last 12 months. The age group of 20-30 years were at risk of injury 61 (77.2%). The prevalence in the first five years was at also greater risk (79.74%). Females have affected more as compared to the males (males (36)45.6% females 43(54.4%), According to qualification, post graduation were 39 (49.4%) & were graduation 40 (50.6%). Mostly PTs did full time job 54 (68.4%). Working hours above 40 per week had indicated more prevalence 34(43%). The PTs work in multiple settings like hospitals + Clinic + Day care centers were at greater risk as compared to individual setting 29 (36.7%).

Conclusion

Through the results of this dissertation that will help out many physiotherapists to aware about MSD's i.e. how to reduce risk factors and how to modify job system and how to overcome these problems. Also this observational study will help out many researchers in future for their experimental studies.

Keywords: Work-related musculoskeletal disorders, Physiotherapists, Musculoskeletal Injuries, Pain



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1 INTRODUCTION

When the work has been done through the many ways of conducting like lifting the equipment's, reaching away from the body or repeating the same task. These all ways may cause repetitive stress on the muscles, tissues, ligaments & joints which can affect the neck, shoulders, arms, wrists, legs & back etc. This type of condition is commonly known as work related musculoskeletal disorder (WRMSDs)¹⁸

Physiotherapists are also very prone to these work-related musculoskeletal disorders (WRMSDs). The basic purpose of this study is to investigate the prevalence and severity of WMSDs in Physiotherapists. The demographic study about the physiotherapists had also been studied. There are many so musculoskeletal disorders from which physiotherapists get affected but mainly the studies shown that back pain may mostly occur due to repetitive work of Physiotherapy practice which will later discuss in literature review.

It has been observed that the physiotherapists who use their body parts continuously with the passage of time gradually with repetitions & inadequate treatment leads to susceptible symptoms of WRMSDs. The symptoms become aggravate with irritability & discomfort which leads to gradual onset. WRMSDs develop in few days but it leads to become worsen for weeks, months or even in years.¹⁶

The working hours had great impact over the physiotherapist life which was found to be chief contributory factor. According to Bureau of Labor Statistics (BLS) about 1 in 5 Physiotherapists worked part-time in 2006, but most worked a traditional 40-hour work week. Because some states require continuing education as a condition of maintaining professional licensure, Physiotherapists often split their time at work with hours in the classroom. As according to BLS ideally not more than 40 hours/week is allotted to PT. The National Institute for Occupational Safety & Health views that the increase number of working hours especially more than 8th hour can cause health issues like chance of obesity, higher incidence of neck & back pain etc.¹⁰

MATERIALS & METHODS (METHODOLOGY):

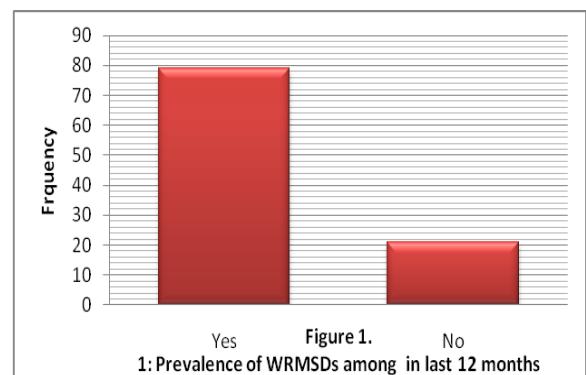
A cross-sectional study was conducted over a period of six months among physiotherapists of Karachi. For this a Questionnaire with informed consent was designed that includes personal Information & occupational health information. The study conducted at different areas of Karachi and covered the Physiotherapist of all major Hospitals, Clinics, Rehabilitation Centers, and Home Based Physiotherapist. The subjects were selected conveniently with the sample size of 100. The collected data was compiled & analyzed by using SPSS 21 for windows version. The physiotherapists were participated regardless of gender, age group, experience, designation, mode of Job, type of work and

location of Job. The physiotherapists who worked only in clinical setup till the age limit of 45 were considered. The technicians, diploma holders, administrative & academic physiotherapists were excluded from the study.

RESULTS

- The sample size 100 had selected out of which it was observed that females had participated more as compared to males. The number of females who had participated were 54 while males were 46 in number. Out of which 79 PTs were affected as the result of WRMSDs.
- Table 1.1: Prevalence of WRMSDs in last 12 months**

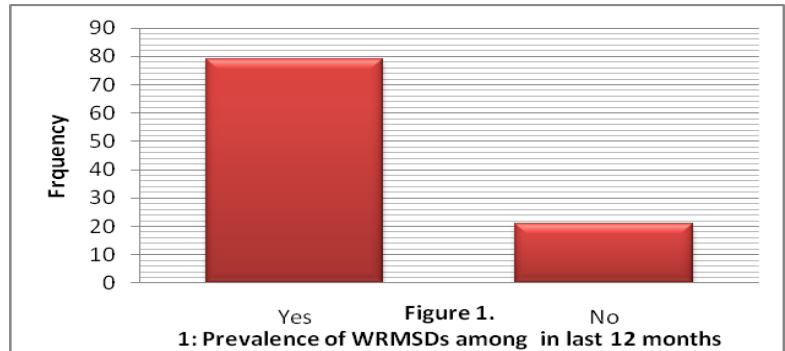
PREVALENCE	FREQUENCY	PERCENTAGE
Yes	79	79%
No	21	21%
Total	100	100%



The further data was analyzed among those subjects who had prevalence of WRMSDs only. Following results were observed during the study:

Table 1.1: Prevalence of WRMSDs in last 12 months

PREVALENCE	FREQUENCY	PERCENTAGE
Yes	79	79%
No	21	21%
Total	100	100%



The further data was analyzed among those subjects who had prevalence of WRMSDs only. Following results were observed during the study:

Table 1.2: Age Group

AGE GROUP	FREQUENCY	PERCENTAGE
20-30	61	77.2%
30-40	13	16.5%
> 40	5	6.3%
Total	79	100%

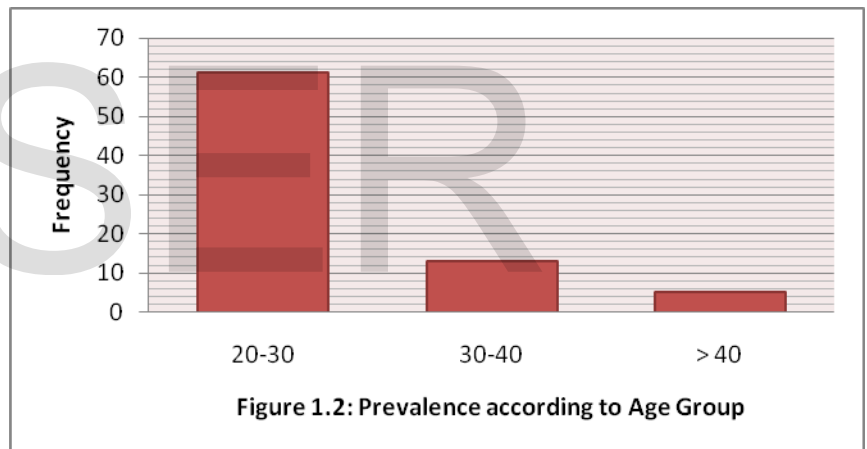


Table 1.3: GENDER

GEN- DER	FREQUEN- CY	PERCENT- AGE
Male	36	45.6%
Female	43	54.4%
Total	79	100%

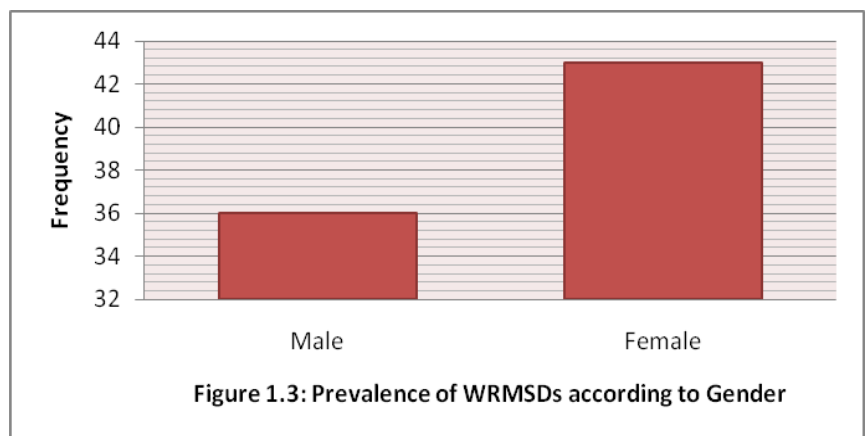


Table 1.4: PROFESSIONAL EXPERIENCE

PROFESSIONAL EXPERIENCE	FREQUENCY	PERCENTAGE
1-5 Years	63	79.74%
5-10 Years	13	16.5%
>10 Years	3	3.8%
Total	79	100%

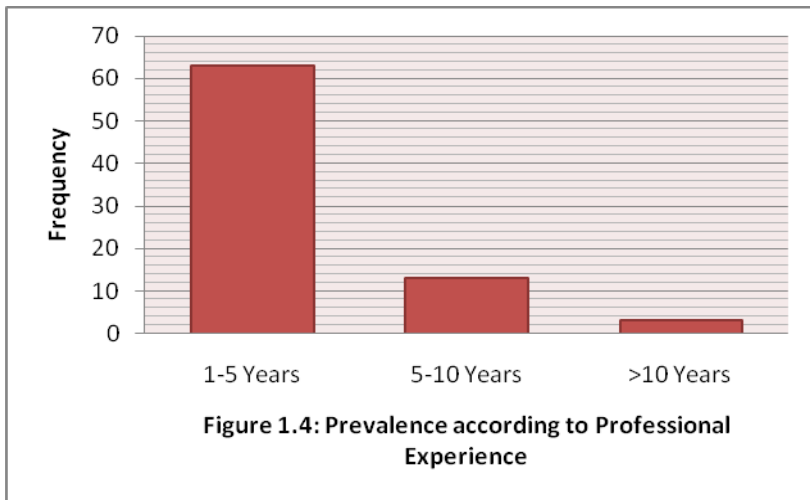
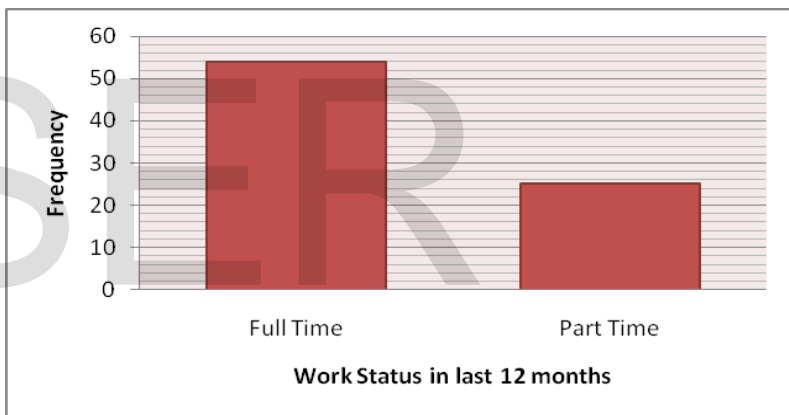


Figure 1.4: Prevalence according to Professional Experience

Table 1.5: WORK STATUS IN LAST 12 MONTHS

WORK STATUS	FREQUENCY	PERCENTAGE
Full Time	54	68.4%
Part Time	25	31.6%
Total	79%	100%



Work Status in last 12 months

Table 1.5: WORKING HOURS (Hours/Week)

WORKING HOURS	FREQUENCY	PERCENTAGE
0-10	2	2.5%
10-20	0	0%
20-30	21	26.6%
30-40	22	27.8%
40-50	34	43%
Total	79	100%

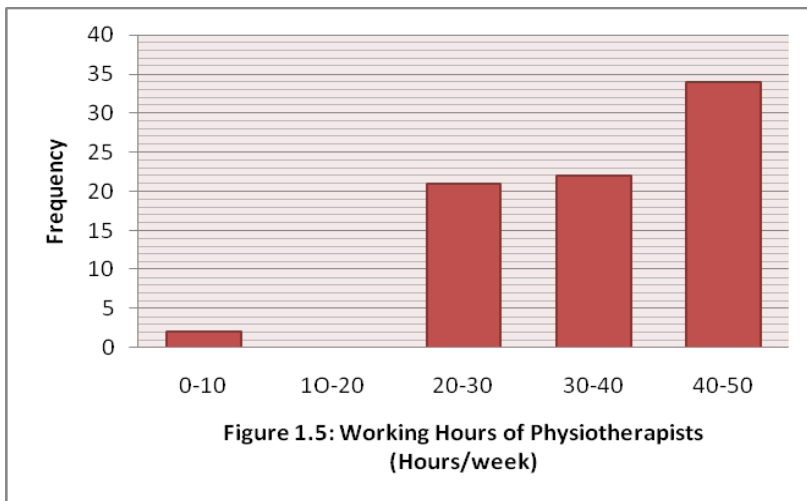


Figure 1.5: Working Hours of Physiotherapists (Hours/week)

PRACTICE AREA	FREQUENCY	PERCENTAGE
Orthopedic Rehabilitation	3	3.8%
Neurological Rehabilitation	6	7.6%
Sports Rehabilitation	3	3.8%
Pediatric Rehabilitation	8	10.1%
Outpatient Department Services	4	5.1%
Cardiopulmonary Services	1	1.3%
Others	1	1.3%
Multiple	53	67.1%
Total	79	100%

Table 1.6: CLINICAL PRACTICE AREA

TYPE OF SETTING	FREQUENCY	PERCENTAGE
University Hospital	27	34.2%
Public Hospital	14	17.7%
Home Visit Services	5	6.3%
Private Physiotherapy Clinics	3	3.8%
Pediatrics Rehabilitation Centers	1	13%
Multiple	29	36.7%
Total	79	100%

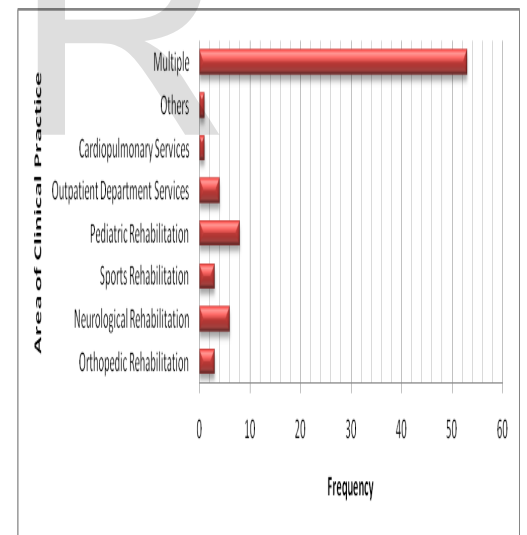
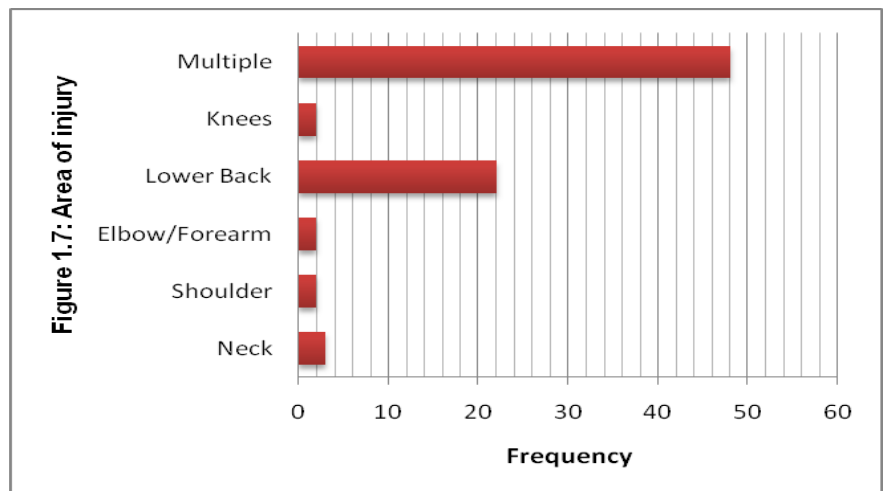
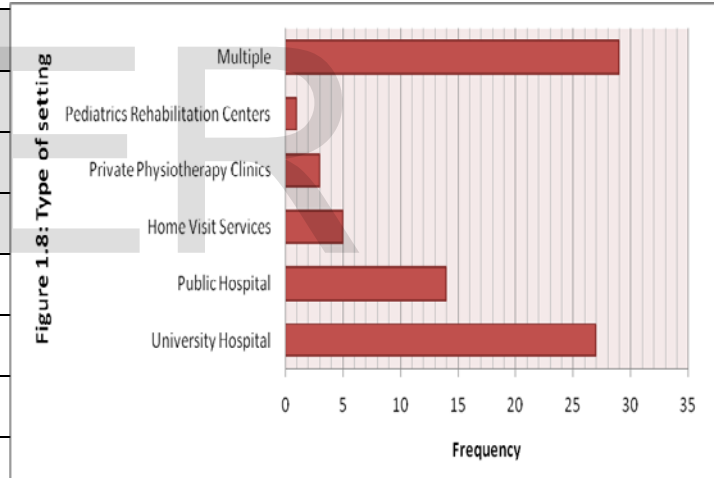


Figure 1.7: AREA OF INJURY

AREA OF INJURY	FREQUENCY	PERCENTAGE
Neck	3	3.8%
Shoulder	2	2.5%
Elbow/ Forearm	2	2.5%
Lower Back	22	27.8%
Knees	2	2.5%
Multiple	48	60.8%
Total	79	100%



TYPE OF SETTING	FREQUENCY
University Hospital	27
Public Hospital	14
Home Visit Services	5
Private Physiotherapy Clinics	3
Pediatrics Rehabilitation Centers	1
Multiple	29
Total	79



DISCUSSION

- According to our studies the prevalence of pain or discomfort from the last 12 months for 3 days had found 79(79%), (Table No: 1.1) while 21(21%) subjects had no complain of pain or musculoskeletal discomfort i.e. the result of the study was almost similar to 74 % prevalence to United Kingdom by Glover et al 2005⁷ & 80 % of united states of America by Bork et al 1996³. But the prevalence was higher than, Florida 45 to 63% & Kuwait 47.6% by Brunt D et al⁴ & Alrowayeh 2010² respectively. While Salik & Ozkan et al 2004¹⁵, Adegoke et al 2008¹, & Cromie 2000⁵ had reported in Turkey 85%, Nigeria 91.3% & Australia 91% respectively in which the physiotherapists suffered from work related musculoskeletal injuries.

Qualification

Studies	Graduation	Postgraduation
Our Studies	50.6%	49.4%
Adegoke 2008 ¹	52 %	48 %
Alrowayeh 2010 ²	50 %	50%

Working Hours

Studies	Working Hours (40-50 hours/week)
Our Studies	50.6%
Eisa 2012 ⁶ (Egypt)	25.8 %
Eisa 2012 ⁶ (Saudi Arabia)	5%
Holder 1999 ⁹	>45%
Salik & Ozkan 2004	76.47%

PREVALENCE

STUDIES	Country (Area)	Percentage
Our Studies	Karachi, Pakistan	79%
Glover et al 2005 ⁷	United Kingdom	74%
Bork et al 1996 ³	United States of America	80%
Brunt D et al ⁴	Florida	45-63%
Alrowayeh 2010 ²	Kuwait	47.6%
Salik & Ozkan 2004 ¹⁵	Turkey	85%
Adegoke et al 2008 ¹	Nigeria	91.3%
Cromie 2000 ⁵	Australia	91%
Useh et al 2002 ¹⁷	Zimbabwe	78.4%
Neeti P et al 2012 ¹¹	Saurashtra Region, India	65%
Graham L et al 2005 ⁸	Glasgow, United Kingdom	61%
West & Gardener et al 2001 ¹⁹	North & Central Queensland, Australia	55%
Obembe et al 2008 ¹⁴	South West, Nigeria	78%
Nkhata et al 2010 ¹²	Zambia	68.3%
Nordin NA et al 2011 ¹³	Kuala Lumpur, Malaysia	71.6%
Holder 1999 ⁹	United States of America	62%

Regarding the work status of physiotherapists in last 12 months, our studies had revealed that 54(68.4%) affected were those who worked full time job while 25(31.6%) sufferers were those whose mode of job was part time. While Adegoke et al 2008¹ had reported 96.8% full time job & 3.2% PTs part time job.

According to clinical practice showed that 53(67.1%) of the physiotherapists had more prevalence in multiple areas. While as according to Bork et al 1996³, the PTs who had worked in neurological rehabilitation had more prevalence of WRMSDs as compared to others specialties. Salik & Ozkan et al 2004¹⁵ found that the PTs who worked in Neurological, Orthopaedic & General OPD had equally prevalence of MSDs while the cardiopulmonary rehabilitation had fewer occurrences of injuries.

As our study showed that PTs who worked in University Hospital 27(34.2%) were at maximum risk although Bork et al 1996³ & Holder et al 1999⁹ also reported that the PTs who worked in hospitals were more prone to injuries. According to the Cromie et al 2000⁵, the PTs who had job practice in the private setting & pediatrics had more prevalence of WRMSDs.

The prevalence according to regions had reported that 3(3.8%) neck problems, 2(2.5%) shoulder regions, 2(2.5%) of forearm/ elbow, 22(27.8%) of low back, 2(2.5%) of knees & 48(60.8%) of multiple areas. While according to the other studies, Salik & Ozkan et al 2004¹⁵ found that 65% of the affected PTs of Turkey had involved multiple regions. Eisa et al 2012⁶ reported that 63.9% of the Egyptian PTs had prevalence in multiple areas while 74% of the PTs of Saudi had occurred in multiple areas.

Regarding the type of injury had found that 25(31.6%) of the PTs affected due to muscle strain while Holder et al 1999⁹ also reported maximum 69 % subjects with muscle strain but Salik & Ozkan et al 2004¹⁵ had showed maximum sufferers due to tendinitis 21%.

The time when the WRMSDs first experienced found that maximum 38(48.1%) PTs had injuries in the first five years after graduation while Adegoke et al 2008¹ also found 46 % PTs in the first five years of graduation.

- Regarding the age, the group of 20-30 years was found to be more affected which is compared with other studies as follows:

Prevalence according to Age Group (20-30 years had more prevalence)

Studies	Age Group (20-30 years)
Our Studies	77.21%
Cromie 2000 ³	91%
Eisa et al 2012 ⁶ (Egypt)	66.1%
Eisa et al 2012 ⁶ (Saudi)	73%

The comparisons of other factors with other studies were observed as: Gender

Studies	Male	Female
Our Studies	54.4%	45.6%
Bork et al 1996 ³	52 %	48 %
Cromie 2000 ⁵	50 %	50%

Moreover studies like Salik&Ozkan et al 2004¹⁵,Eisa et al 2012⁶,Cromie et al 2000⁵&Adegoke et al 2008¹,were resembled with the results of our study on some issues like leaving physiotherapy profession, use of tactics by physiotherapists, changing of specialty & respond to injury.

CONCLUSION:

Through the findings of results & discussion it had been concluded that work related musculoskeletal disorders among the physiotherapists show a great concern on their clinical practice & may disturb their working life. Female physiotherapists were more affected comparatively to male physiotherapists. Physiotherapists had mostly injuries in multiple areas. In this study, certain variables like type of setting, work experience, area of specialty & working hours were studied. In future, further studies regarding risk factors & modification strategies are recommended to overcome this disorder in more effective way.

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