IJCRT.ORG ISSN : 2320-2882

INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

An International Open Access, Peer-reviewed, Refereed Journal

Prevalence Of Work-Related Musculoskeletal Disorders In Physiotherapists Of Anand District – Observational Study

(E-SURVEY)

[1] Dr. Vishwas Vaghela, [2] Dr. Hemangi Parmar

[1]Professor, [2]Assistant Professor

[1]Shri Suleshwari College of Physiotherapy, Bhandu,Mehsana,India.

[2] Pioneer Physiotherapy College, Vadodara, India.

Abstract: Musculoskeletal disorders are common among healthcare workers all over the world. They are common causes of severe long-term pain and physical disability. Physiotherapists report a high rate of musculoskeletal disorders despite having expert knowledge of musculoskeletal injuries and injury prevention strategies.**Materials and Method**: A self-constructed e-questionnaire was sent to all the participants through email, Whatsapp, and other social media platforms. A total of 73 physiotherapists responded and were included in the study.**Results**: A cross-sectional study among physiotherapists of Anand district for the prevalence of Work-related musculoskeletal disorders was performed which was high that is 78.08% with 77.19% of affected females and 22.81% of affected males. The lower back (56.14%) region was reported to be the highest affected region.**Conclusion**: Based on our study, it is concluded that despite the usage of modifications and coping strategies the prevalence of work-related musculoskeletal disorders is high in physiotherapists of the Anand district.

Index Terms **-** prevalence, musculoskeletal, disorder, physiotherapist, survey

INTRODUCTION

Musculoskeletal system disorders are common among health care workers worldwide.[1, 2] Leading to severe long-term pain and physical disability. When the surrounding work environment and the performance of work contribute to causing regional impairments of the muscles, tendons, nerves, joints, and such kind of disorders, then they are known as work-related musculoskeletal disorders. [2,3]

Work-related musculoskeletal disorders (WMSDs) are characterized as multifactorial, with physical, psychosocial/organizational, individual, and occupational components.. [4,5]

According to the world health organization (WHO), the term work-related musculoskeletal disorder describes “a wide range of inflammatory and degenerative diseases and disorders that result in pain and functional impairments. They arise when individuals are exposed to work activities and conditions that significantly contribute to their development or exacerbation, but which may not be their sole cause”.[6]

Physiotherapists are at high risk of developing work-related musculoskeletal disorders as they are involved in physically challenging and intense repetitive procedures in their practices with the age and gender of the

therapist as a factor. The three primary risk factors that have been associated with work-related musculoskeletal disorders are repetitious movement, awkward postures, and high force levels.[7]

Physical therapists also may routinely perform activities such as transferring dependent patients, assisting patients in gait, providing manual resistance, assisting with mat activities, and lifting heavy cumbersome equipment. These work tasks put therapists at risk for both acute and cumulative work-related musculoskeletal disorders.Despite of awareness regarding usage of modification techniques to avoid postural strains and work-related musculoskeletal injuries there are number of hazards amongst the population which impacts onthe work of therapists. The majorly seen impacts are short-term or temporary work disability, lost worktime or absenteeism, increase work restriction, transfer to another job, reduced productivity and affectsthe quality of life and co-morbidity in many working populations.

Work-related musculoskeletal disorders are now emerging as a major issue as it gives hazardous effects on personal lives as well as professional values of the physiotherapists. Additionally, there is a lesser number of evidence available regarding the prevalence of work-related musculoskeletal disorders in physiotherapists of the Anand district. Hence this study was conducted to find out the prevalence of work-related musculoskeletal disorders in physiotherapists of the Anand district with respect to the risk factors involved**.**

RESEARCH METHODOLOGY

Population and Sample

Physiotherapists of Anand District were approached to willingly take participation in the study. A total of 73 physiotherapists have responded to this E-survey.

Data and Sources of Data

Physiotherapists working in hospital setups , private clinics , home-based care and working as an academicians of Anand District are requested to take part in the study.

Theoretical framework

A cross-sectional survey study was conducted at B.N.PATEL COLLEGE OF PHYSIOTHERAPY after getting approval from the ethics committee. A self-constructed questionnaire was circulated in the form of Google form to various physiotherapists of the Anand district through e-mails, Whatsapp, Instagram, and other social media platforms. The self-constructed questionnaire was sent which included 3 sections. Section I included demographic data, job description, hours per week spent on patient care, Section II included questions related to onset of pain, area of pain, work-related discomfort experienced due to said pain, and Section III included questions about job risk factors, ergonomic changes done by physiotherapists to avoid pain. The Google form was sent to physiotherapists of the Anand district who gave prior consent. Reminders were sent every 10 days for 3 months to those who failed to fill the form the previous times.From the received responses those who met the inclusion criteria were considered as participants for the study and were further processed for analysis.The link of google form is mentioned below:
https://docs.google.com/forms/d/e/1FAIpQLScaUrE3TVr97D7tjc3H0rXGzVkfv79J6jzrwXvsn1D2fGkQ8w/viewform

Inclusion Criteria:

1. Male and Female Physiotherapist
2. 22-50 year Age Group
3. Physiotherapist working in hospital setups, Private Clinic, Home-based care, and academicians.

Exclusion Criteria :

1. Undergraduate students and interns.
2. History of physical trauma in past.

3. Diagnosed with degenerative disorders, inflammatory diseases, or any congenital anomalies.

4. Subjects with cardiovascular diseases or severe pulmonary diseases.

5. Subjects who had undergone any orthopedic surgery.

6. Pregnant females.

Statistical tools and econometric models

Statistical analysis of the study was done by using SPSS 22 software. The data was entered into the computer using a Microsoft-Excel sheet, tabulated, and subjected to statistical analysis. Descriptive analysis was used for the characteristics of participants. Mean and standard deviation was calculated as a measure of central tendency and measure of dispersion respectively.

.

RESULTS AND DISCUSSION

Table 4.1 Gender distribution of participants

	Frequency	Percentage
Female	56	76.7%
Male	17	23.3%
Total	73	100%

Table 4.2 Descriptive information of total respondents

	Mean	**Standard Deviation**	**n (total participants)**
Age	25.795	4.531	73
BMI	22.22	3.586	73
Hours per week	29.166	25.75	73

Graph 4.2: Work status of participants

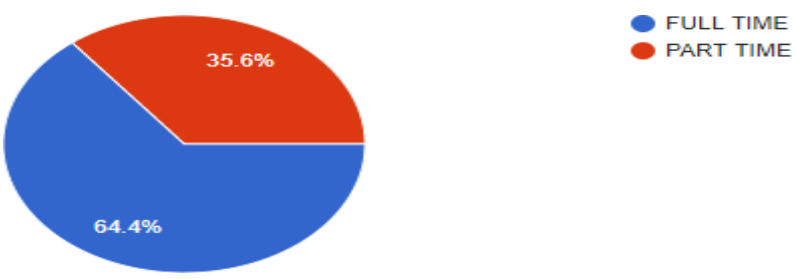


Table 4.3 Physiotherapists Having complain of Pain

	Frequency	Percentage
Yes	57	78.1%
NO	16	21.9%
Total	73	100%

Table 4.4 Gender distribution of participants having Pain

	Frequency	Percentage
Female	44	77.19%
Male	13	22.81%
Total	57	100%

Table 4.5 Descriptive information of participants having pain

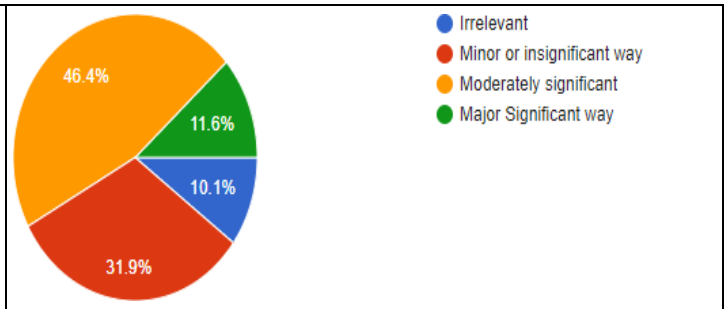
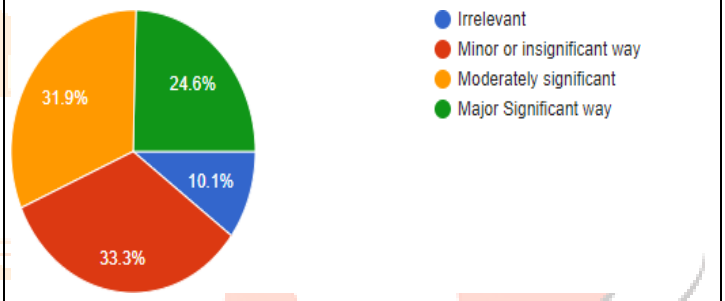
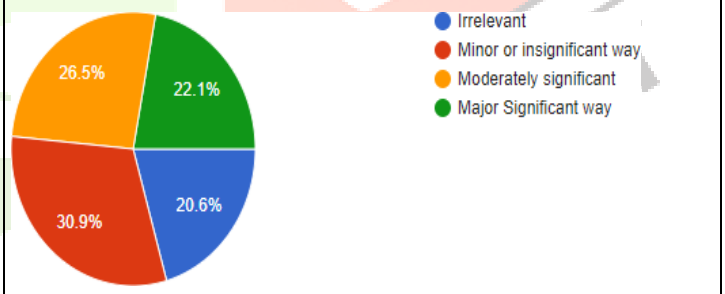
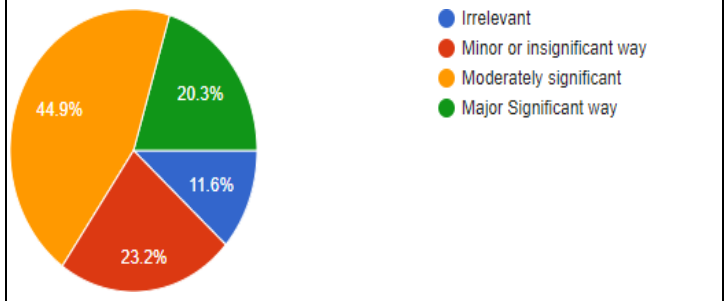
	Mean	Standard Deviation	n (participants having pain)
Age	25.596	4.354	57
BMI	22.466	3.517	57
Hours per week	31.642	27.52	57

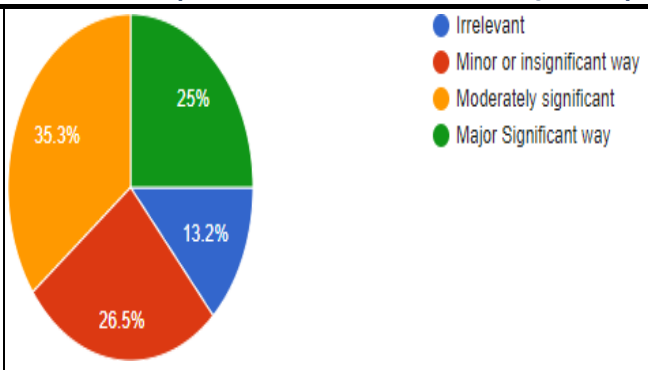
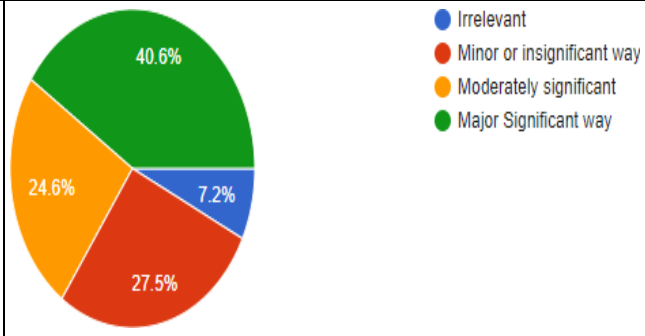
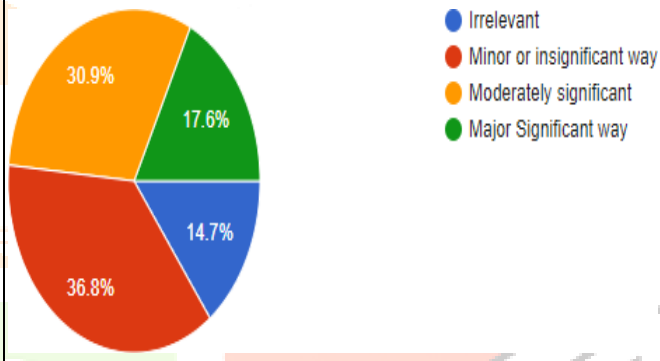
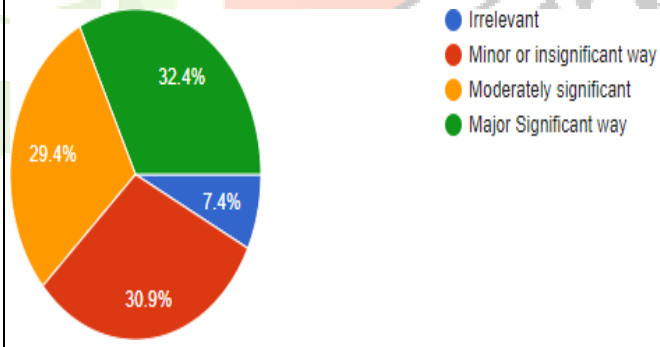
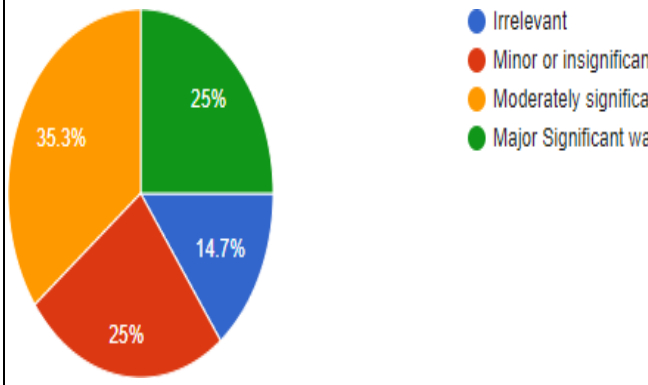
Table 4.6 Percentages of area distribution according to anatomical areas

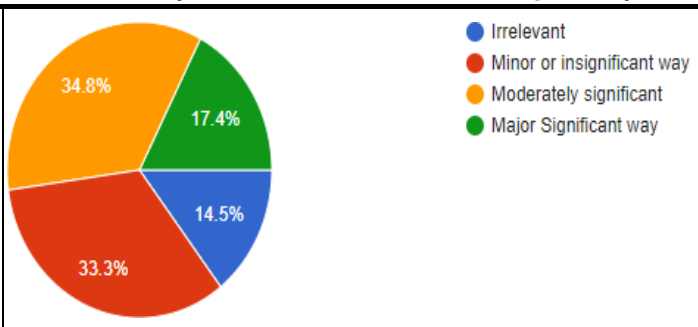
Sr. no	Anatomical Area	Percentage with symptoms
1	Neck	42.10%
2	Shoulder	12.28%
3	Upper Back	22.80%
4	Elbow	3.5%
5	Lower Back	56.14%

6	Wrist/Hand	1.75%
7	Hip/Thigh	1.75%
8	Knees	7.01%
9	Ankle/Feet	15.78%

JOB RISK FACTORS:

	Performing the same task over and over	
	Treating a large number of patients in one day	
	Not taking enough breaks during the day	
	Performing manual orthopedic techniques (joint or soft tissue mobilization)	

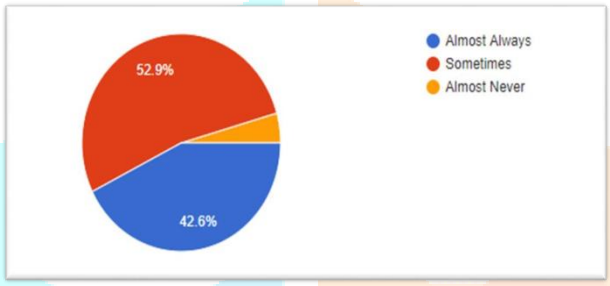
	Working in an awkward or cramped position	
	Working in the same position for long periods (standing, bend over sitting, etc)	
	Reaching or working away from your body	
	Lifting or transferring dependent patients	
	Working at or near physical limits	

	Working schedule (overtime, irregular shifts, length of workday)	

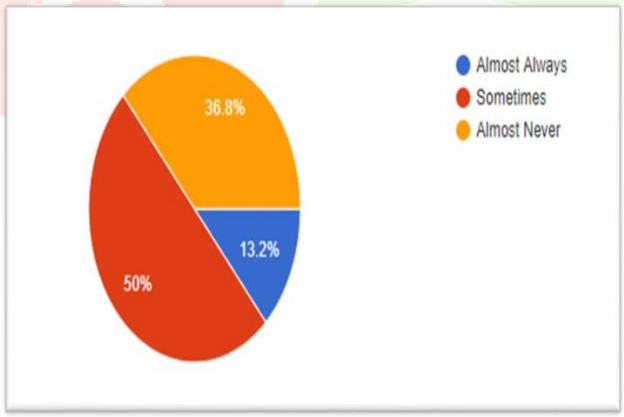
COPING STRATEGIES:

To reduce strain on body, physiotherapists have adopted various coping strategies while working some of them are as follows.

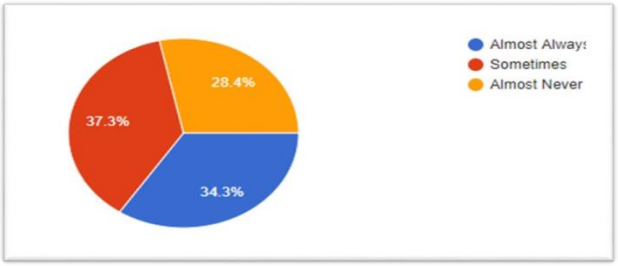
Graph 4.16 Modification of patient's or therapist's position



Graph 4.17 Warm up or stretch before performing manual technique



Graph 4.18 Stopping the treatment if it aggravates discomfort



I. DISCUSSION

Our study aimed to observe the prevalence of work-related musculoskeletal disorders in physiotherapists of the Anand district**.** A total of 73 physiotherapists participated in our study via responding to the google form. The google form was circulated repeatedly on social media platforms.We found that out of 73 physiotherapists who responded to our survey a total of 57 physiotherapists (78.08%) are suffering from work-related musculoskeletal disorders.

Our findings suggest that there were more female physiotherapists(76.71%) than male physiotherapists (23.29%) reflects the population of work-related musculoskeletal disorders from which our sample was drawn . As we received more female physiotherapists (76.71%) having work-related musculoskeletal disorder suggestive of more prevalence in female physiotherapists in comparison with male physiotherapists. Also ,the female gender has a potential risk factor for the occurrence of work-related musculoskeletal disorders. This may be due to the height and weight of female physiotherapists which puts them at a disadvantage during patient's treatment and/or transfer. [8]
In this study, the mean age of the physiotherapists was 25.596 years. We found out that majority of physiotherapists with the presence of work-related musculoskeletal disorders were in the age group of 21-25 years. One of the possible reasons can be with the increasing age of the physiotherapists the prevalence of work-related musculoskeletal disorders decreases due to less direct contact with patients, or adaptation of coping strategies like modification of treatment. The study undertaken by Babatunde et al. among Nigerian physiotherapists suggests that the majority of physiotherapists were found to have experienced work-related musculoskeletal disorders within the first five years of graduation.[9] It is similar to the findings of our study on the prevalence of work-related musculoskeletal disorders in the Anand district.

Based on results, we found out that the lower back region is the most common to get affected. This may be due to awkward postures while handling patients, lifting and handling dependent patients, maintaining and repeating difficult lower back positions for longer periods during treatment. Our findings are relatable with those previous studies that have stated low back as the body part most commonly affected by work-related musculoskeletal disorders among physiotherapists prevalence ranges between 22% and 74%.[10,11,12]
In this study, the commonly affected lower back region was followed by the neck region which accounts for 42.10%. The reasons behind this may be lifting with sudden maximal effort, awkward postures of the upper extremity while performing joint mobilization or soft tissue manipulations. Also according to the recently available literature, Female physiotherapist exhibited an increased risk of work-related musculoskeletal disorders in the neck/upper back and shoulders/elbows, stating that the female gender is associated with 21% increase in chances of injury to the neck or upper back and 13% increased chances of injury to shoulder or elbow region in Israel. [13,14]

The higher prevalence we found in the low back and neck region may be due to the high percentage of physiotherapists dealing with an excessive number of daily patients, lifting or transferring dependent patients, and working while being injured.

The risk factors commonly identified in our study which contributed to the increasing occurrence of work-related musculoskeletal disorder among physiotherapists are performing the same task over and over, treating a large number of patient in one day, not taking enough break during the day, performing manual orthopedic techniques(joint/soft tissue mobilization), working in awkward or cramped postures, working in the same position for long periods(standing, bend over, sitting), bending or twisting back awkwardly, reaching or working away from the body, unanticipated sudden movements or falls by the patient, assisting patients during gait activities, lifting or moving heavy equipment and working at or near their physical limits.Previous studies have similarly identified treating a large number of patients in a day and working in the same position for a longer duration, lifting or transferring patients and performing manual techniques are reported to cause work-related musculoskeletal disorders among physiotherapists.[15]

The most commonly adopted coping strategies among the physiotherapist in our study were to modify their positions or patients' position, modify the treatment or the type of technique that aggravate their discomfort, perform specific stretches or exercise before starting their daily routine and adjusting the plinth height. This result is similar to that of Glover et al that reported the four most important coping strategies adopted by the physiotherapists are therapist adjusting plinth height, therapist modifying their position or patients' position,

obtaining assistance while dealing with heavy patients, and ceasing a patient's treatment if it aggravates therapist's discomfort. [16]

The areas of physiotherapy that are more prone to work-related musculoskeletal disorders were sports physical therapy, private practice, and pediatrics. In sports physical therapy it may be due to the type of task they perform. It is reported that there is a higher prevalence of knee symptoms in pediatric physical therapists due to the large amount of time spent the by therapist in kneeling and crouching positions. Workload problems relating to the way physiotherapists work were related to the symptoms in the neck, upper back, and upper limbs may contribute to the higher prevalence of work-related musculoskeletal disorders among private practitioners. Repeated muscle contractions and static loading are known to be the risk factors in developing cumulative trauma disorders. [17,18,19]

Thus our finding may suggest the further reflection of the overall picture of the poor conditions of day-to-day practice that may cause a high prevalence of work-related musculoskeletal disorders among physiotherapists of the Anand district.

Limitations of our study,

1. Sample size is small.
2. Inclusion of academician and clinical therapist both may cause a diversion in the transparency of the results as there will be differences in form of work setting, type of work, and working hours.

CONCLUSION

Work-related musculoskeletal disorders are nowadays most evident among healthcare workers. The hidden presence of these disorders in physiotherapists may lead to creating serious hazards on work performance and productivity. Based on the results of our study it is concluded that the prevalence of work-related musculoskeletal disorders is high among physiotherapists of the Anand district. Also based on our study, we can conclude that female physiotherapist has more prevalence of developing work-related musculoskeletal disorders. We found that the majority of physiotherapists developing work-related musculoskeletal disorders were of age group 21-25 years. Concerning the region of affection in the body, we found out that prevalence of involvement of lower back region is most common in the physiotherapist of Anand district despite following coping strategies and modification of risk factors.

REFERENCES

[1] Bork BE, Cook TM, Rosecrance JC, Engelhardt KA, Thomason ME, Wauford IJ et al. Work- related musculoskeletal disorders among physical therapists. *Phys Ther.*1996; 76(8):827-35.

[2] Nizami GN, Sarfraz M, Nizami SN. Prevalence of low back pain in home-based physical therapists. *Pakistan Journal of Rehabilitation*. 2013;2(1):22-30

[3] Nkhata LA, Zyaambo C, Nzala SH, Siziya S. Work-related musculoskeletal disorders: prevalence, contributing factors and coping strategies among physiotherapy personnel in Lusaka, Kitwe and Ndola districts, Zambia. *Medical Journal of Zambia.* 2010;37(4):262-267

[4] Alrowayeh HN, Alshatti TA et.al. Prevalence, characteristics, and impacts of work-related musculoskeletal disorders: a survey among physical therapists in the State of Kuwait. BMC Musculoskeletal Disorder 2010; 11:116.

[5] West DJ and Gardner D. Occupational Injuries of physiotherapists in North and Central Queensland. Australian Journal of Physiotherapy 2001; 47: 179-186.

[6] World Health Organization. Identification and control of work-related diseases. Geneva: The Organization; 1985. Technical Report Series No. 714.

[7] Silverstein, BA, Fine, LJ, Armstrong TJ. Occupational tjctors and carpal tunnel syndrome.*Am JInd Mpd.* 1987;11:343-358.

[8] Bork BE, Cook TM, Rosecrance JC, Engelhardt KA, Thomason MEJ, Wauford IJ, Worly RK: Work-related musculoskeletal disorders among physical therapists. *Phys Ther* 1996, 76:827- 835.

[9] Adegoke, Babatunde OA, Ashiyat K. Akodu, and Adewale L. Oyeyemi. "Work-related

musculoskeletal disorders among Nigerian physiotherapists." *BMC musculoskeletal disorders* 9.1 (2008): 1-9. Cromie JE, Robertson VJ, Best MO: Work- related musculoskeletal disorders in physical therapists: prevalence, severity, risks and responses. *Phys Ther* 2000, 80:336-351.

[10] Glover W, McGregor A, Sullivan C, Hague J: Work- related musculoskeletal disorders affecting members of the Chartered Society of Physiotherapy. *Physiotherapy* 2005, 91:138-147.

[11] Shehab D, Al-jarallah K, Moussa MAA, Adham N: Prevalence of low back pain among physical therapists in Kuwait. *Med Principles Pract* 2003, 12:224-230.

[12] West DJ, Gardner D: Occupational injuries of physiotherapists in North and Central Queensland. *Aust J Physiother* 2001,47:179-183.

[13] Rozenfeld V, Ribak J, Danziger J, Tsamir J, Carmeli E. Prevalence, risk factors and preventive strategies in work-related musculoskeletal disorders among Israeli physical therapists. Physiother Res Int. 2010;15(3):176–84, http://dx.doi. org/10.1002/pri.440.

[14] Scholey M, Hair M: The problem of back pain in physiotherapists.*Physiother Pract* 1989, 32:179-19.

[15] Cromie JE, Robertson VJ, Best MO. Work-related musculoskeletal disorders in physical therapists: prevalence, severity, risks, and responses. Phys Ther. 2000; 80:336 -351.

[16] West DJ and Gardner D. Occupational Injuries of physiotherapists in North and Central Queensland. Australian Journal of Physiotherapy 2001; 47: 179-186.

[17] Darragh, A. R., Huddleston, W., & King, P. Work-related musculoskeletal injuries and disorders among occupational and physical therapists. American Journal of Occupational Therapy 2009; 63, 351-362.

[18] Yesim Salik and Ayse Özcan. Work-related musculoskeletal disorders: A survey of physical therapists in Izmir-Turkey. BMC Musculoskeletal Disorders 2004; 5:27-32.

[19] Holder NL, Clark HA, DiBlasio JM, et al. The Cause, Prevalence, and Response to Occupational musculoskeletal Injuries reported by physical therapists and physical therapist assistants during a 2-year period. Phys Ther 1999; 79:642-652.