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PREVALENCE OF MUSCULOSKELETAL DISORDER AMONG CLINICAL PHYSICAL THERAPIST'S IN PESHAWAR

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Abstract

Musculoskeletal disorders (MSK) are injuries that include a wide range of degenerative diseases and disorders that lead to pain or functional impairment. Risk factors for MSK are excessive repetition, heavy physical load or psychosocial stress, awkward postures, heavy lifting, smoking, a higher body mass index (BMI), and the presence of comorbidities (rheumatism, pain and arthritis) are common biomechanical risk factors which causes MSK): Education of Physical therapists regarding ergonomic and biomechanical principles as well as hands-on patient handling are key tool which help to prevent MSK . Objectives of the study is to determine the prevalence of musculoskeletal disorders among clinical physical therapist in Peshawar. A descriptive cross-sectional study carried out to determine the prevalence of MSK disorders among clinical physical therapists in Peshawar. Data collected through questionnaire named Nordic Questionnaire. The results of the study is to provide a baseline of information about the prevalence of musculoskeletal disorders among clinical physical therapists in Peshawar. The percentage of musculoskeletal disorders in clinical physical therapists in Peshawar was 19.9% in neck, 12.5% in shoulder, 1.4% in elbow, 5.1% in wrist/hands, 11.6% in upper back, 27.3%in lower back, 7.9% in one or both hip/thighs, 10.2% in one or both knees and 4.2% in one or both ankles. In current study, we had concluded a high prevalence of musculoskeletal disorders among clinical physical therapist in Peshawar, which is ranging from 25-60 or above 60 years of age.

INTRODUCTION

Musculoskeletal disorders (MSKDs) are injuries that include a wide range of inflammatory or degenerative diseases and disorders that lead to pain or functional impairment. It's arises from muscles, joints, ligaments, tendons and bones and persists for more than three days to work related events and conditions (Khairy, Bekhet *et al.*, 2019). The injuries or disorders of the nerves, joints, muscles, tendons, cartilage and the multiple elements of the spinal column, these structures clinically marked as strain, sprains, soreness, pain, joint tears, inflammation, and changed joint mobility. These disorders affect all healthcare professions, especially such as dentists, nurses, occupational and physical therapists (Waller, Bowens *et al.*, 2022). *International Labor Organization (ILO)* has listed

WMSDs as occupational disorders since 1960, in the Western countries, WMSDs rank as the second occupational disorder, the final prevalence of WMSDs is up to 80% in the nurses, which is considered as the major cause for the decrease of working efficiency. Work-related musculoskeletal disorders (WMSDs) is consider one of the major factors for the labor market and complications is to health costs, reduced productivity, and lower quality of life. The major features of WMSDs included, discomfort, pain, and movement limitation mainly presenting in the lower back, shoulder, neck, forearm, and hands. The path mechanisms of MSKDs affecting ligaments, nerves, tendons, muscle, pain perception and circulation The patients with musculoskeletal conditions may be assessed and managed effectively and independently by physiotherapists (Downie, McRitchie *et al.*, 2019). Cross sectional survey in 2022 conducted in Lahore and D.G Khan for those working in hospital for clinical or private clinics to find out the prevalence of Work related musculoskeletal, disorder in clinical PT. The standard Nordic MSK Questionnaire. The N=132 both male and female included those have minimum experience included of 4 months working in clinical setup. In this study within 12 month different area in Upper limb and lower limb were affect (MSKDs) they are included neck > low back pain > upper back and the order of pain during last 7 days were low back pain > neck > shoulder. Conclusion: neck and lower back more affected than elbow (*Ahmad, Khan et al.*, 2022). Cross-sectional study in 2018 carried in Iran, total 333 online questionnaires sent and 319 fully completed and use data analysis. Use Nordic questionnaire. This questionnaire find pain in neck (57.4%), shoulders (50.2%), upper back (49%), Lumber (65%) and knee (45.5%) showed highest prevalence and elbow (21.6%), wrist, thigh and ankle (19.7%) showed lowest prevalence(Rahimi, Kazemi *et al.*, 2018). There was strong evidence that many physical (e.g., awkward postures and prolonged works) and psychosocial (e.g., high job demands and stress) risk factors were associated with WRMSDs in construction workers. (J.ergon *et al* 2021). Physical work requiring poor postures and frequent lifting, bending, or twisting are reported to be risk factors for LBP Risk factors for WMSD are excessive repetition, heavy physical load or psychosocial stress, awkward postures, heavy lifting, smoking, a higher body mass index (BMI), and the presence of comorbidities (rheumatism, pain and arthritis) are common biomechanical risk factors which causes PTs perform manual therapy, such as soft tissue mobilization, which mean that the upper limb is exposed to risk factors associated with musculoskeletal and neurovascular disorders, and this professional routinely perform activities that involved transferring a patent and lifting and using cumbersome. These all task put therapists at risk for both acute and cumulative musculoskeletal pain (Rahimi, Kazemi *et al.* 2018). To date, the most commonly reported symptoms were nonspecific low back pain, wrist and hand syndromes neck-shoulder, and carpal tunnel syndrome. (Yan, Li *et al.*, 2017). Repetitive movement, inappropriate physical condition, high work pressure, treating large number of patients in a day, manual techniques and direct contact with the patient had highest rates of complaints (Rahimi, Kazemi *et al.*, 2018). MSKDs result in pain and functional impairment and may affect, besides others, the neck, shoulders, elbows, forearms, wrists and hands (Buckle *et al.*, 2022). Prevention: introduce ergonomics during the PT curriculum is essential so that therapists can learn to work efficiently and effectively, reduce stress reduction and teamwork, decrease duration of contact with patients could decrease the risk of WMSKDs (Alghadir, Zafar *et al.*, 2017). Avoid general stress, physical stress, painful tiring posture and work stress during treatment (Hämmig 2020). Study showed that 24 of the therapists (65.9%) reported suffering from MSD. The disorders were more common in occupational therapists than physical therapists and the gender was not effective. Considering the difference between the rate of incidence among occupationa therapists and physical therapists, we suggested occupational therapists

should use their manual practices and follow ergonomic basis while handling and transferring their patients (Nazari, Hosseini Mahjoob *et al.*, 2017). Management (Treatment): Education of Physical therapists regarding ergonomic and biomechanical principles as well as hands-on patient handling are key tool, which help to prevent WMSDs *(Musaed Z Alnaser et al., 2019)*. Cytotoxicity of the supplements/drugs commonly used for the treatment of musculoskeletal disorders: Curcumin, Hyaluronic Acid, Palmitoylethanolamide, Diclofenac sodium, Triamcinolone acetonide and Thiocolchicoside but only Curcumin had a positive effect on cell survival *(FDi Melgli et al., 2020)*. The interventions were reported in four criteria which were (1) Policies and procedures to reduce the work related musculoskeletal disorders (2) Specialized equipment (3)Staff training and (4)Support and follow. It can prevent and reduce the work related musculoskeletal disorders (Asuquo, Tighe *et al.* 2021). Preventive strategies have differentiate and combine measure for the reduction of both physical strain and psychological stress (Hämmig 2020).3

METHODOLOGY

STUDY DESIGN

Descriptive cross-sectional study.

STUDY SETTING

Hayatabad Medical Complex (HMC)
Khyber Teaching Hospital (KTH)
Lady Reading Hospital (LRH)
Rehman Medical Institute (RMI)
Mehboob Medical Center (MMC)
Northwest Hospital (NW)
Paraplegic Center

STUDY POPOLATION

Clinical Physical Therapists working in hospitals of Peshawar.

STUDY DURATION

This period of the research was six months from January 2023 to Aug 2023.

SAMPLE SIZE

The duration for data collection was 3 months and in this duration, we collected data from Physical Therapists in tertiary care hospital and paraplegic center through census. The total sample size were 83 Clinical Physical Therapists.

SAMPLING TECHNIQUES

The sampling technique is not applicable.

INCLUSION CRITERIA

Clinical Physical therapist in tertiary care hospitals and Paraplegic center
Clinical Physical therapists were more than 1-year clinical Experience.
Physical therapists who were 25-55 year of age.
Both male and female clinical physical therapist were included.

EXCLUSION CRITERIA

Undergraduate clinical Physical Therapists.
Physical therapists who were less than 1 year clinical experience.
Clinical Physical therapist who were below 25 and above 55 year of age. Internees were excluded.

DATA COLLECTION PROCEDURE

After approval of the topic from the research committee of Sarhad institute of Allied Health Sciences (SIAHS) of Sarhad University Peshawar, A Descriptive cross-sectional survey was conducted to determine the prevalence of work-related musculoskeletal disorders among physiotherapists in Peshawar. For data collection, firstly we taken permission from hospitals authorities, informed consent were taken for the participants and then data were collected through Nordic Questionnaire. it consist of multiple choice question. It has two phases a demographic questionnaire and general questionnaire (focusing three specific part of our body) about MSK disorders.

OPERATIONAL DEFINATIONS

Prevalence: Refers to the total numbers of individuals in a population who have a disease or health condition at a specific period, usually

expressed as a percentage of the population.

Musculoskeletal Disorders: Musculoskeletal disorders (MSKDs) are injuries that include a wide range of inflammatory or degenerative diseases and disorders that lead to pain or functional impairment. It's arises from muscles, joints, ligaments, tendons and bones and persists for than three days to work related events and conditions *(Walaa Ahmed et al..2019).*

Physical Therapist: A health care profession with expert knowledge and understanding of the intricate working of the body.

RESULTS

Data was collected for a sample size of 83 research participants in tertiary care hospital and paraplegic center and our aim to present the result in a well elaborate meaner

THE AGE OF REASEARCH PARTICIPANTS

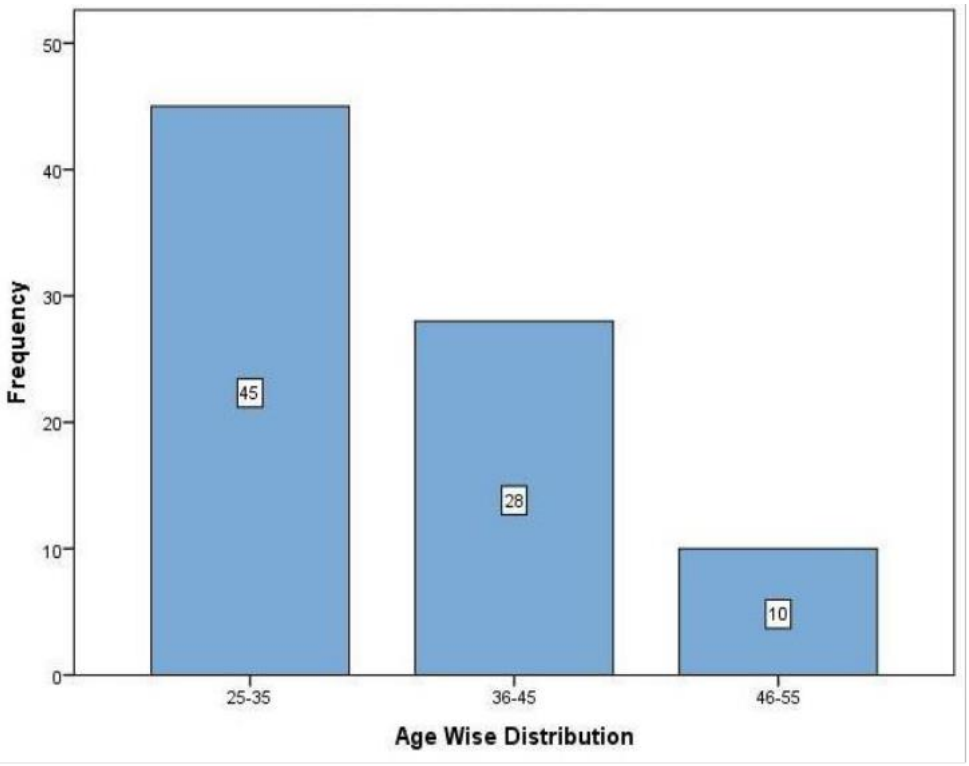

Figure 1. The above figure.1 shows that 45 (54.2%) PTs age 25 to 35 were affected by MSK disorders While 28 (33.7%) PTs age 36 to 45 and 10 (12.0%) PTs age 46 to 55 were affected by MSK disorders.14

THE GENDER OF THE RESEARCH PARTICIPANTS

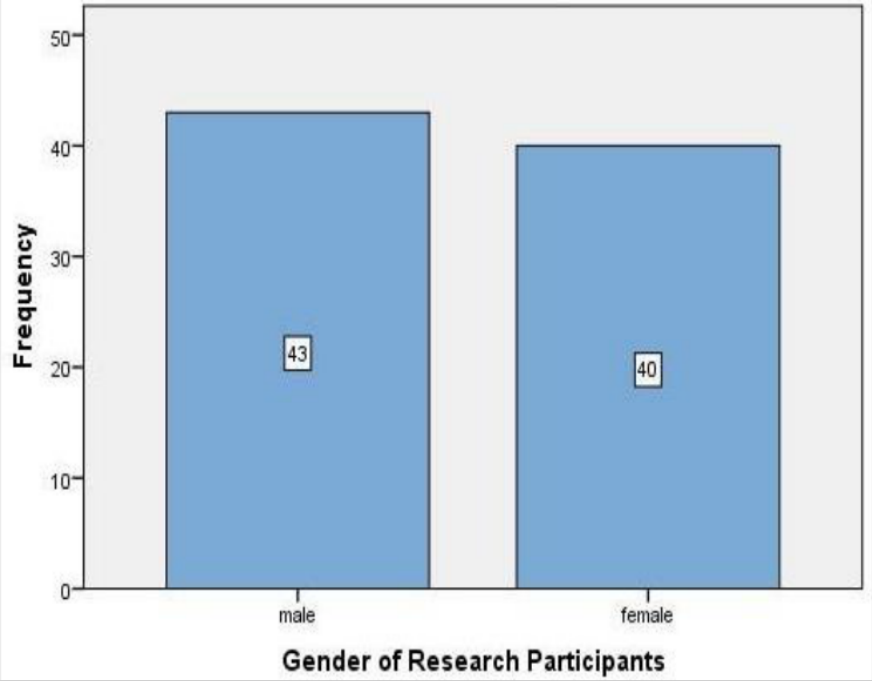

Figure 2. The above figure 2 shows that male PTs 43 (51.8%) and Female PTs 40 (48.2%) were affected by MSK disorders eight of Research Participants.15

THE HEIGHT OF RESEARCH PARTICIPANTS

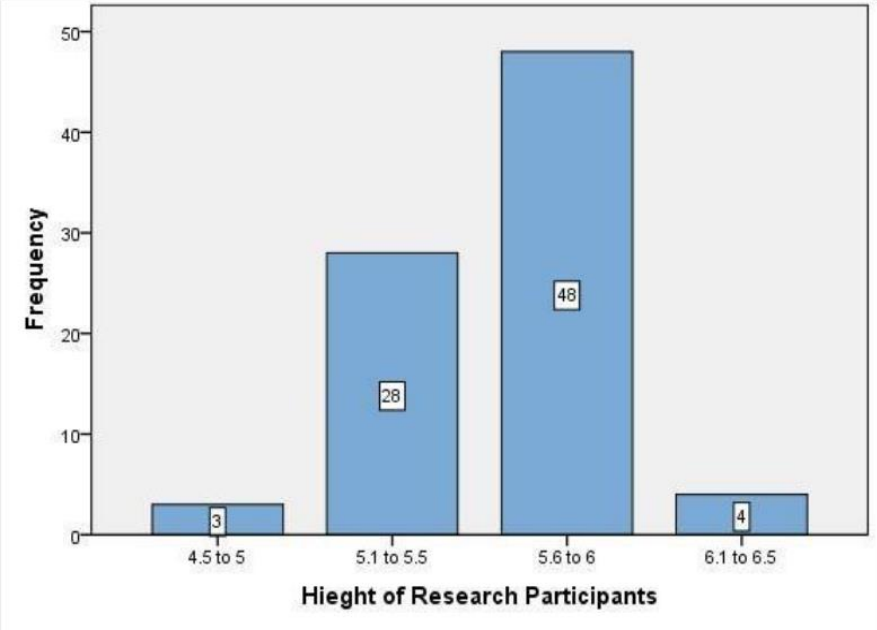

Figure 3. The above figure 3 shows that 3 (3.6%) PTs height of 4.5 to 5, 28 (33.7%) PTs Height of 5.1 to 5.5, 48 (57.8%) PTs height of 5.6 to 6 and 4 (4.8%) PTs height of 6.1 to 6.5) PTs were affected by MSK disorders.16

THE WEIGHT OF THE RESEARCH PARTICIPANTS:

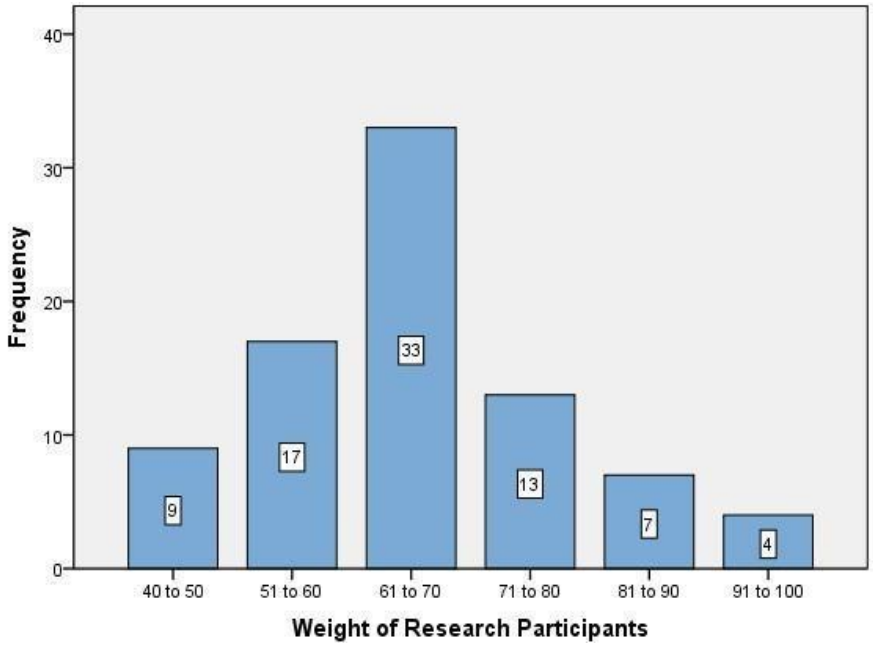

Figure 4. The above figure 4 shows that 9 (10.8%) PTs weight of 40-50, while 17 (20.5%) PTs Weight of 51-60, while 33(39.8%) PTs weight of 61-70, while 13 (15.7%) PTs weight of 71-80, while 7 (8.4%) PTs Weight of 81-90, while 4 (4.8%) PTs weight of 91-100 were affected by MSK disorders.17

THE CLINICAL EXPERIANCE OF THE RESEARCH PARTICIPANTS

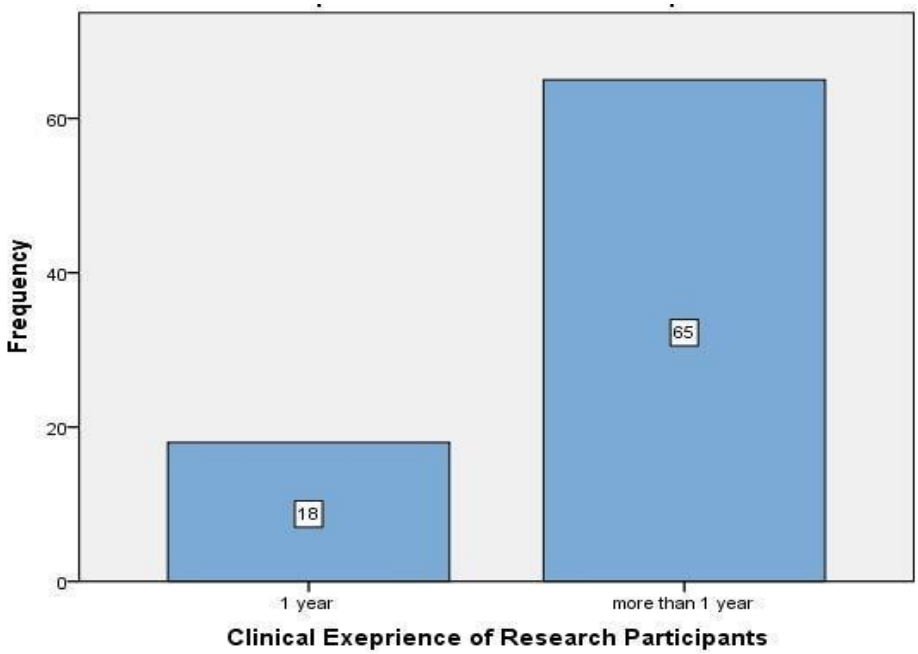

Figure 5. The above figure 5 shows that 18 (21.7%) PTs of 1 year clinical Experience, while 65 (78.3%) PTs of more than 1-year clinical experience were affected by MSK disorders.18

THE MSK PROBLEMS OF THE RESEARCH PARTICIPANTS

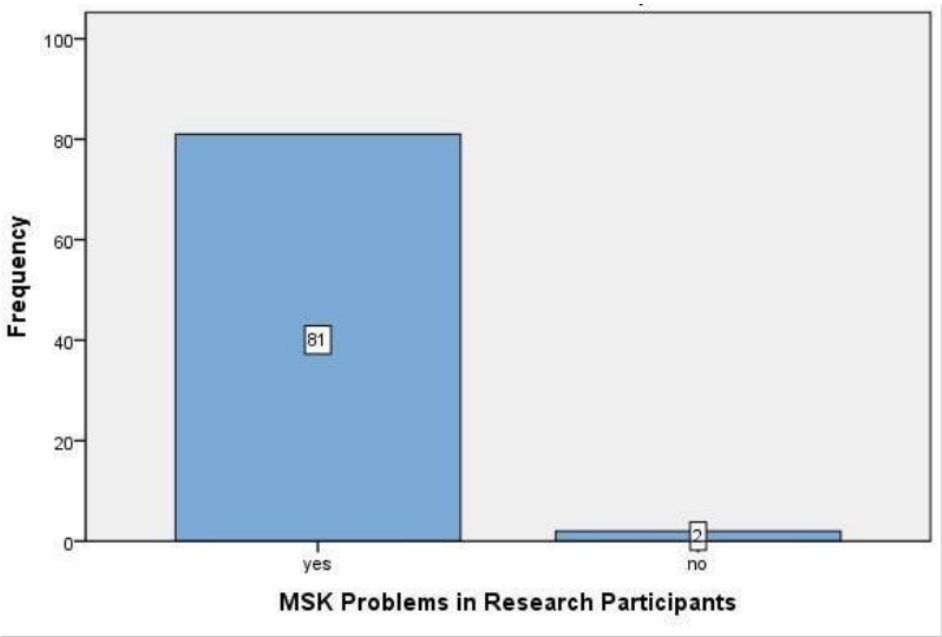

Figure 6. The above figure 4.6 shows that 81 (97.6%) PTs were affected by MSK disorders, while 2 (2.4%) PTs were not affected by MSK disorders.19

THE HOSPITALS OF RESEARCH PARTICIPANTS

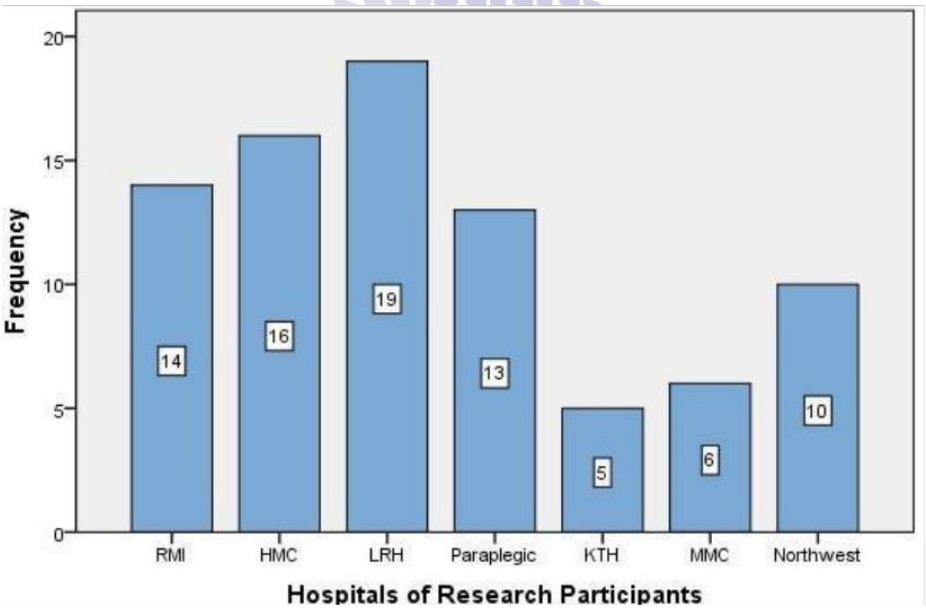

Figure 7. The above figure 7 shows that 14 (16.9%) PTs in RMI, while 16(19.3%) PTs in HMC, while 19 (22.9%) PTs in LRH, while 13 (15.7%) PTs in paraplegic center, while 5 (6.0%) PTs in KTH, while 6(7.2%) PTs in MMC, while 10(12.0%) PTs in Northwest Hospital were affected by MSK disorders.20

4.8THE AFFECTED REGION OF RESEARCH PARTICIPANTS

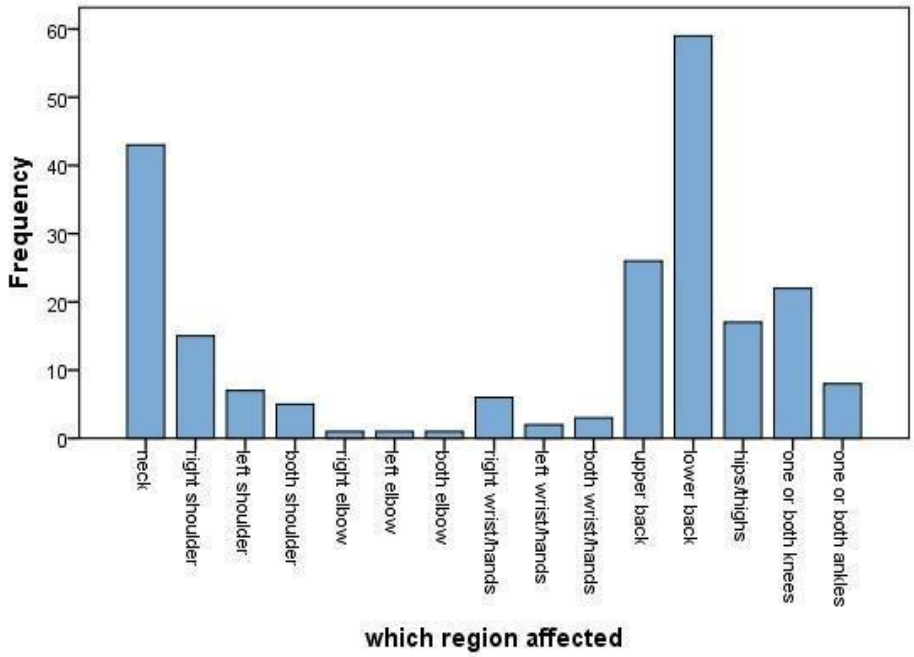

Figure 8. The above figure.8 shows that 43 (19.9%) PTs had neck, while 27 (12.5%) PTs had shoulder, while 3 (1.4%) PTs had elbow, while 11 (5.1%) PTs had wrist/hands, while 25 (11.6%) PTs had upper back, while 59 (27.3%) PTs had lower back, while 17 (7.9%) PTs had one or both hip/thighs, while 22 (10.2%) PTs had one or both knees and while 9 (4.2%) PTs had one or both ankles MSK problems.21

DISCUSSION

The aim of our study was to find out the prevalence of MSK injuries among clinical physical Therapists. In a study there were total 83 clinical physical Therapists including male and female, there were (43) Males and (40) females. The clinical PTs age ranges is (25-55) of Age, accordingly to this study in (27.3%) PTs lower back pain was present, while in (19.9%) PTs Neck pain was Present, while in (12.5%) PTs shoulder pain was present, while (11.6%) PTs upper back pain was present while in (10.2%) PTs knee pain was present, while in (7.9%) PTs hip and thighs pain was present, while in (5.1%) PTs hands and wrists pain was present, while in (4.2%) PTs ankle pain was present and (1.4%) PTs Elbow pain was present. The prevalence of MSK disorders in 83 PTs were (97.6%).

(Passali, Maniopoulou et al. 2018). A study to evaluate the association of personal, professional and health factors with the development of WMSD among nursing staff in hospitals in the capital of Greece. The study was conducted online with 394 nurses (age).: 37.85± 7.48 years (19.54% male and 80.46% female) to screen WMSD proportionally in nurses, using a questionnaire based on the Nordic Musculoskeletal Questionnaire. The overall prevalence of musculoskeletal disorders was 98%, with symptoms for the back (85.3%), neck (71.2%) and back (70. 7%). The body parts most affected by symptoms were the lower back (66%) and the neck (61%).For physiotherapists specialization in acute care, geriatrics and pediatrics, the most affected body parts was the lower back, while for physiotherapists specializing in orthopedics and neurology, the most affected body parts was the neck. Therefore, the most affected parts of the body were the lower back

and neck. Prevalence rates and affected body parts vary with practice settings and areas of specialization. These findings can help inform the design of evidence-based rehabilitations, prevention, and training and education programs.

A cross-sectional survey conducted to determine the prevalence of musculoskeletal disorders among Iranian physiotherapists. The survey completed online by Iranian physiotherapists from June 2017 to August 2017. 333 questionnaires were collected online, 319 questionnaires were fully completed and used to analyze data. The Persian version of the Nordic Questionnaire was the main outcome measure.22 This questionnaire identified work-related pain or discomfort in 9 body parts, including:

(1) neck, (2) shoulder, (3) elbow, (4) wrists, (5) upper back, (6) lower back, (7) thighs, (8) knees, and (9) ankles. According to this study, the prevalence of musculoskeletal disorders among Iranian physical therapists was 94%. The lower back (65%), neck (57.4%), shoulder (50.2%), upper back (49%), and knee (45.5%) regions are the most common for these disorders. While ankle (19.7%) and elbow (21.6%) disorders were the least prevalent, they concluded that the prevalence of work-related musculoskeletal disorders was high among Iranian physiotherapists, especially of the lower back. Areas, neck, shoulders and upper back (Rahimi, Kazemi et al. 2018).

(Abu-Taleb and Rehan Youssef 2021) Another study was conducted to estimate the prevalence of WMSD among Egyptian faculty members. Three hundred eighty-five eligible participants completed a survey. The prevalence of WMSDs was 99.5%. The top five body regions affected were the lower back (69.1%), neck (65.7%), shoulder (47.7%), wrist/hand (39.1%), and upper back (37.0%)

The following study neglect our study because our sample size was limited due to short study duration.

Another reason is that the physiotherapists of Kuwait and Croatia was well aware of his their posture and use advance techniques during their practice that is why the low prevalence rate. A descriptive cross-sectional study was conducted by Alnaser et al. to determine the prevalence and risk factors of WMSDs among PTs in Kuwait during a 12-month period in Kuwait in 2019. The self-administered questionnaire was distributed in public hospitals and Kuwaiti schools. 312 returned questionnaires were received (69.3% response rate). Consistent with these findings, the results showed that 149 (48%) of the PT participants experienced WMSDs. The lumbar region and muscle spasm were the most commonly affected body regions and injury types, respectively. Manual therapy techniques and patient transfers were the most common activities associated with injuries, and the prevalence of PTs with WMSDs in Kuwait was high and similar to other studies of PTs with WMSDs working in other countries (Alnaser & Aljadi, 2019)

(Tišlar, Starc et al. 2022) conducted study to explore work-related musculoskeletal disorders among physiotherapists in Croatia. According to this study,23the prevalence of WMSDs among physiotherapists was 63.9% (most common sites:low back, shoulder and neck).

CONCLUSION

This study was performed among 83 researcher participants (Physical Therapists) to find out the prevalence of musculoskeletal disorders among clinical Physical Therapists in Peshawar. In this study the overall prevalence of MSK disorders is 97.6% (81 PTs), in which 51.8% (43) male and 48.2% (40) female clinical Physical Therapists were affected. Accordingly to this study (27.3%) lower back, (19.9%) Neck, (12.5%) shoulder, (11.6%) upper, (10.2%) knee, (7.9%) hip and thighst, (5.1%) hands and wrists pain was present, (4.2%) ankle and (1.4%) elbow. In this study, mostly clinical Physical therapists were musculoskeletal disorders in lower back, secondly in neck and very less clinical Physical therapist were musculoskeletal disorders in elbow.

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