Risk factors" and musculoskeletal complaints" in health workers working in clinical wards.

A Research project

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University of Basrah

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By students

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

﴿ وَهُوَ الَّذِي أَنْزَلَ مِنَ السَّمَاءِ مَاءً فَأَخْرَجْنَا بِهِ نَبَاتَ كُلِّ شَيْءٍ فَأَخْرَجْنَا مِنْهُ خَضِرًا نُخْرِجُ مِنْهُ حَبًّا مُتَرَاكِبًا وَمِنَ النَّخْلِ مِنْ طَلْعِهَا قِنْوَانٌ دَانِيَةٌ وَجَنَّاتٍ مِنْ أَعْنَابٍ وَالزَّيْتُونَ وَالرُّمَّانَ مُشْتَبِهًا وَغَيْرَ مُتَشَابِهٍ انْظُرُوا إِلَى ثَمَرِهِ إِذَا أَثْمَرَ وَيَنْعِهِ إِنَّ فِي ذَلِكُمْ لَآيَاتٍ لِقَوْمٍ يُؤْمِنُونَ ﴾.

(الأنعام/٩٩)

إهداء

أهدي هذا العمل المتواضع إلى أبي الذي لم يبخل علي يوماً بشيء

وإلى أمي التي ذودتني بالحنان والمحبة

أقول لهم: أنتم وهبتموني الحياة والأمل والنشأة على شغف الاطلاع والمعرفة

وإلى إخوتي وأسرتي جميعاً

ثم إلى كل من علمني حرفاً أصبح سنا برقه يضيء الطريق أمامي

إلى أساتذتي

إلى زملائي وزميلاتي

إلى الشموع التي تحترق لتضيء للآخرين

إلى كل من علمني حرفا

أحبكم حبا لو مر على أرض قاحلة

لتفجرت منها ينابيع المحبة

Support Supervisor’s

I certify that this project of research ("Risk factors" and musculoskeletal complaints in health workers working in clinical ward) .was prepared under my supervision at the college of nursing, university of Basra as partial fulfillment of the requirement for the degree of baccalaureate in nursing sciences.

Supervisor

Dr. Mohammed Abd Al-Redha Al-Mayahi

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Risk factors" and musculoskeletal complaints in health workers working in clinical wards

Abstract

Background

Health care professions are known to be at high risk for musculoskeletal disorders and they exposed to occupational hazards and risks (e.g., Work-related musculoskeletal disorders (WMSDs) are associated with these factors.

Objective

The objective of this research was to investigate the risk factors and determine the prevalence musculoskeletal complaints in health workers working in clinical wards and to investigate the relation between these complaints and various work related and personal variables.

Methodology

Descriptive study was used Sample made up of non-probability, voluntary purposeful health workers in this study. This design was carried out in order to achieve the aims of the present study Risk factors" and musculoskeletal complaints in health workers working in clinical wards.The research conducted between the period from 5 December 2021 to 1st April 2022.this study focuses on the part that includes socio-demographic data and part that include risk factors for the skeletal system to which the medical staff is exposed.

Results

The response was (85%) and resulted in 100 completed questionnaires.40% of participants were at age (18-28) , 37% were at age (29-39) and 23% were at age 39 or older .This study contains female (64%)and (36%) male . As regarding to the level education most of the study samples (46%) were graduate of Institute ،Present study revealed that 49% were suffered from arm or neck complaint, 44% were suffered from regular back complaint and 51% suffered from leg complaint. assessment of risk factors on the skeletal System for health staff, The result shows the high percentage regarding medium risk factors of musculoskeletal system for the health staff was 85%,while the low level was 15% and the high level of risk was 0%.was found that (67%) work for a long time and there is no opportunity to take a break from the work ,and (33%) working under time pressure .

Conclusions

This study provided risk factors" and musculoskeletal complaints in health workers working in clinical wards Through self-reported (subjective) survey, found that The proportion of female more than male, Majority of samples were at age (18-28). A small percentage of the participants have lower back, the outcome for those exposed to a medium risk score was 85%.

Recommendation

The study recommended that education, awareness and training programs on prevention risk and complaint musculoskeletal be made mandatory for healthcare professionals.

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Abbreviation	Meaning
WMSDs	Work-related musculoskeletal disorder
MSDs	Musculoskeletal system disorder
NIOSH	National Institute for Occupational Safety and Health

CHAPTER ONE
INTRODUCTION

Topic Overview

1-1 Introduction.

Health care professions are known to be at high risk for musculoskeletal disorders and they exposed to occupational hazards and risks (e.g., Work-related musculoskeletal disorder (WMSDs) are associated with these factors: (Rodgers, S. H. *et al,* 1983)

1. Work postures and movements, Repetitiveness and pace of work, Force of movement's.

2. Discomfort and fatigue if it is maintained for long periods of time. Standing, for example is a natural body posture, and by itself poses no particular health hazards However, working for long periods in a standing position can cause sore feet, general muscular fatigue, and low back pain. In addition, improper layout of work areas, and certain tasks. Can make health worker use unnatural standing positions. Repetitive movements are especially hazardous when they involve the same joints and muscle groups over and over and when we do the same motion too often, too quickly and for too long. (Picavet HS, *et at*, 1999)(Stubbs DA, 1983).

Work involving movement repeated over and over is very tiring because the health worker cannot fully recover in the short periods of time between movements.

Eventually, it takes more effort to perform the same repetitive movements. When the work activity continues in spite of the fatigue, injuries can occur. (Dijkstra A.*et al,* 1986)

Pace of work determines the amount of time available for rest and recovery of the body between cycles of a particular task. The faster the pace, the less

time is available and the higher the risk for WMSD. (Smedley J. Egger P. *et al*, 1995).When the health worker has no control over timing and speed of work because of external factors like assembly line speed or quota systems then stress level increases. With higher stress level comes muscle tension causing fatigue and again increased risk for WMSD. Controlling the pace of work externally denies the health worker the flexibility to determine their own work speed. (Smedley J. *et at*, 1995; Pheasant S Stubbs, 1992; Arad D .*et al*, 1986; Niedhamnmer I. *et al*, 1994).

1-2 The Aim of studying.

1-Identifying the prevalence rates of complaints of the musculoskeletal system of the neck, shoulder – lower back and determining the relationship between the risk factors associate with physical and psychological work.

2-Identify demographic information for health care worker in the clinical wards.

3-Establish a relationship between the complaint and demographic Information.

1-3 Statement of the problem

Effects of physical and social risk factors for musculoskeletal disorders in health workers staff.

1-4 Objectives

The objective of this research was to investigate the risk factors and determine the prevalence musculoskeletal complaints in working in clinical wards and to investigate the health workers complaints and various work related and relation between these personal variables

1-5 Definition of the problem

1. The musculoskeletal system (locomotor system) is a human body system that provides our body with movement, stability, shape, and support, and maintaining body homeostasis. Overexertion, fatigue, prolonged loads, insufficient oxygen and repetitive activities can reduce muscle contraction. Lack of rest may induce injury risks. (Moore K. L.*et al*, 2014)

2. Health workers are people whose job it is to protect and improve the health of their com-munities Together these health workers, in all their diversity, make up the global health workforce (World Health Organization, 2006)

3. Risk factors are determinants associated with an increased risk of disease. Risk factors can be genetic or an aspect as of personal behavior lifestyle or environmental exposure (Margolese RG, *et al* , 2000).

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4. Musculoskeletal complaints. Injuries and disorders that affect the human body's movement or musculoskeletal system (i.e. muscles, tendons, ligaments, nerves, discs, blood vessels, etc. ; National Research Council and the Institute of Medicine (2001).

5. Work environment is the setting, social features and physical Condition

In which you perform your job. These elements can impact feelings of wellbeing, workplace relationships, collaboration, efficiency and employee health.

6. Increased work pressure. Some of the many causes of work-related stress include long hours, heavy workload, job insecurity and conflicts with coworkers or bosses. Symptoms include a drop in work performance, depression, anxiety and sleeping difficulties.

7. Dynamic load is the load the actuator sees when it is powered and extending or retracting. The dynamic load capacity of an actuator refers to how much the actuator can push or pull.

CHAPTER TWO REVIEW OF LITERATURES.

2-1 Background

The primary functions of the musculoskeletal system include enabling motion, offerIng protection, supporting the body, and maintaining body homeostasis. Overexertion, fatigue, prolonged loads, insufficient oxygen, and repetitive activities can reduce muscle contraction (Fanello *et al*, 2002). Lack of rest may induce injury risks. Musculoskeletal disorders Involve pain and inflammation in body tissues (e.g., muscles, tendons, and nerves), reduced motor function, or muscle/bone discomfort caused by the continuous exertion of force and repeated movements (Pan *et al*., 2015) .Generally, MSDs are soft tissue inflammation in the body or degenerative diseases such as tendinitis, muscle strain, joint degeneration, nerve compression, or tenosynovitis. Symptoms of musculoskeletal system disorder include pain, soreness, swelling, and restriction of posture angle. In addition to acute trauma, musculoskeletal system disorder are mostly caused by chronic injuries attributable to long-term poor posture, repetitive movements, improper force exertion, and overloading (Lee *et al*., 2011).

Risk assessment

1. Identify hazards and workers at risk.

2. Evaluate and priorities risks.

3. Decide on preventive action.

4. Take action through preventive and protective measures.

5. Monitor and review the risk assessment at regular intervals.

2-2 Risk factors for musculoskeletal disorders and related consequences in the healthcare sector

The MSD risk factors are grouped in the following three clusters that can interact with each other

1. Physical workload.
2. Organizational and psychosocial factors.
3. Individual factors.

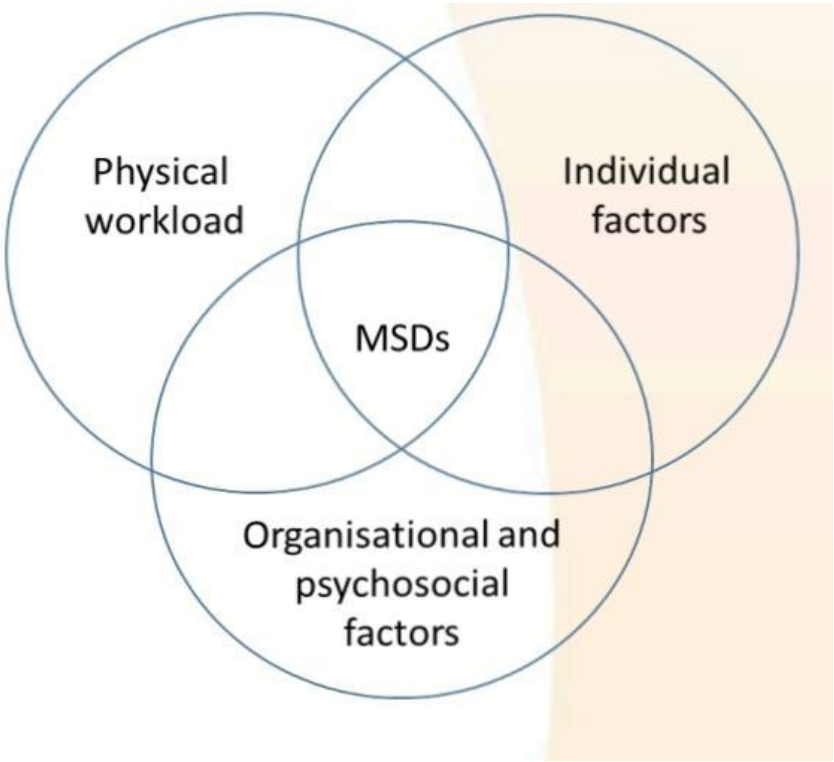

Figure (2-1) the interacting factors influencing the risk of MSDs.

1-Physical workload

- Physical exertion during patient handling and transfer

A high level of physical exertion during work is the most comprehensively documented risk factor for developing poor health. Perceived physical exertion during patient handling and transfer reflects the balance between physical work demands and the capacity of the worker. The work demands are Influenced by how well the work is organised, how many healthcare workers are available and the availability and use of proper assistive devices. The capacity of the worker relates to multiple elements. These elements include skills and knowledge in transferring and handling patients, as well as the Physical capability of the worker. Thus, perceived physical exertion captures the sum of these factors.

In the healthcare sector, studies with thousands of workers show that high physical exertion during patient handling and transfer increases the risk of:

1- Developing chronic low-back and knee pain in workers without prior pain (Andersen *et al*, 2013)
2- Sickness absence (Andersen *et al*, 2004 ; Horneij *et al*, 2004)
3- Disability pension (Andersen *et al*, 2020)

- Ergonomic factors and handling technique

The National Institute for Occupational Safety and Health (NIOSH) recommends that the peak compression force of the low back should not exceed 3,400 newtons during work. Biomechanical Studies performed in laboratory settings show that many different patient-handling situations exceed this safety limit (Skotte *et al*, 2002), especially situations where the healthcare workers manually attempt to lift or Move the patient and work situations with a bent or twisted back (Skotte *et al*, 2008 ; Marras *et al*,

1999) e.g. transferring, repositioning, turning, moving and elevating the patient manually.Patient-handling tasks that involve reaching, pushing and pulling also increase the risk of developing neck and shoulder pain (Smedley *et al*., 2003). In comparison, work with an upright back does not seem to be a risk factor for low-back pain (Holtelman *et al*, 2013)

- Patient characteristics

Biomechanical studies have confirmed that the characteristics of the patient markedly influence the load on the low back (Skotte *et al*, 2008) .Overweight patients Increase the load on the low back in an exposure–response fashion, i.e. the more overweight the patient, the higher the load. Likewise, patients with different levels of physical disability also increase the load on the low back. A common trait of these situations is that the healthcare worker has to use a higher physical effort to handle the patient, which induces a higher load on the musculoskeletal system. Thus, using appropriate handling techniques with the necessary assistive devices and mobilising the patient's resources is crucial in these situations. Having more healthcare workers working at the same time can also be necessary.

- Assistive devices

While delicate patient-handling and transfer situations, e.g. for elderly, obese or disabled patients, and a high number of patient transfers are inherent parts of daily work for many healthcare workers.a proper handling technique with consistent use of assistive devices can help mitigate part of the excessive risk.Biomechanical studies performed in a laboratory setting and more recently also during field measurements at hospitals show that proper use of assistive devices is an efficient way to reduce the load on the

al low back during patient handling and transfer(Skotte *et al*, 2002 ; Marras *et al* , 1999) .

- Number of patient transfers

The daily number of patient transfers is also a risk factor for MSDs higher number of patient's leads to a higher risk of MSDs. Thus, the risk factors related to each patient-handling and transfer situation will accumulate with a higher number of patients. Studies in elderly care situations (Holtermann *et al*, 2013) and hospitals (Andersen *et al*, 2019) have documented the number of daily patient transfers as a potent risk factor for developing chronic low-back pain and acute back injuries. Thus, a risk assessment should also take in to consideration whether individual workers transfer an excessive number of patients and whether the number of transfers can be distributed better between the workers to allow sufficient recovery and breaks during the workday.

2-Organisational and psychosocial factors

While the physical workload is the most substantial direct risk factor for MSDs, especially for low-back pain and back injury, psychosocial and organizational factors also contribute.

- Social capital

Can be understood as informal networks in the workplace - characterized by shared norms, values and understandings that are reflected in trust and good cooperation between colleagues in a team, between different teams and between colleagues and their leaders (Andersene *et al*, 2015). Thus, Social capital reflects social resources in the workplace. Thus weak social

capital can lead to unsafe patient handling and transfer, resulting in an increased risk of MSDs.

- Resources and organizational factors

A lack of resources and inadequate organisation of the work can lead to time pressures for healthcare workers. Time pressure can indirectly influence MSDs through a higher physical workload. Too many Patients per worker creates time pressure, and the highest levels of MSDs are seen at hospitals with a high 'patient load' in terms of the patients per healthcare worker ratio (Cole *et al*, 2009; Larese *et al*, 1994).

Time pressure, in terms of a high work pace with many patients, has a direct influence on the level of physical exertion during work (Januario *et al*, 2019).

Healthcare workers also rate time pressure as the most critical barrier for not using the appropriate assistive devices during patient transfers (Jakobsen *et al*, 2019). This double-effect a high number of Patient-handling tasks and transfers combined with insufficient use of assistive devices leads to an elevated risk of MSDs.

- Organizational changes

Organisational changes with reorganisation, downsizing and lay-offs are often a consequence of budget cuts. While mostly studied in relation to work-related psychological and social issues, organizational Changes may indirectly influence the risk of MSDs. Increased physical work demands, particularly in women and workers with lower income. Thus, nurses, nurses' aides and Social and healthcare assistants are especially prone to increased physical workload, and thus MSDs, due to downsizing (Nordang *et al*, 2010).

3-Individual factors

While physical workload is the most substantial direct risk factor for MSDs, individual factors also contribute

- Age

From the age of around 40 years, individual physical capacity (muscle strength and cardiovascular fitness) declines 1 % or more per year (Suetta *et al*, 2019; Newton *et al*, 2002). Thus, from the age of 40 to 60 years, health care workers lose at least 20 % of their physical capacity. If the physical work demands remain the same, then the relative physical workload. Physical workload relative to individual physical capacity.will increase. In other words, the reserve capacity will gradually diminish, making the physical work tasks increasingly more strenuous as age progresses. Furthermore, cumulative exposure from Years of high physical work demands contributes to 'wear and tear' of the body and increases the risk of involuntary early exit from the labour market (Sundstrup *et al*, 2017). Thus, the health consequences of high physical work demands can be more severe for older than for younger healthcare workers.

- Lifestyle

Low muscle strength and endurance increases the risk of developing low back pain in healthcare without prior pain (Rasmussen *et al*, 2013) and poor sleep, which May be caused by stress or other factors, is also a risk factor for developing low-back pain in healthcare workers without prior low-back pain(Vinstrup *et al*, 2020).

- Psychological factors

  - High job demands, conflicting instructions and responsibilities, time pressure or the Lack of control over the worker's own work.
  - Interpersonal relationships, which play an important role: lack of respect and support, shortage of assistance, interpersonal conflict and harassment can have physical Consequences; the release of stress hormones, for example, can lead to a tightening of the muscles and muscular problems.

2-3 The prevention of MSDs.

Your risk of developing MSDs increases with age. Your muscles, bones, and joints naturally deteriorate as you get older. But that doesn't mean that MSDs are inevitable. By taking care of your body throughout adulthood, you can lower your risk of developing these disorders.

It's crucial to develop healthy lifestyle habits now. Regular strengthening exercises and stretching can help keep your bones, joints, and muscles strong. It's also important to complete everyday activities in safe ways. Maintain a tall posture to prevent back pain, be careful when picking up heavy objects, and try to keep repetitive motions to a minimum.

2-4 previous study

Sandul Y *et al*, 2014, A cross-sectional assessment of risk factors in a tertiary hospital, India‹finding through This study population contains 64.3% (41.4% male and 58.6% female) of exclusive clinical practitioners and 35.7% of those who are both clinicians as well as academicians. Among all, 68.5% of the participants were married. Only 3.6% participants were smokers and 8.6% were alcoholics, which is a negligible portion. Of all, 35% were involved in other types of physical activities such as sports, exercises, and yoga routinely, whereas only 12.2% take part in recreational activities out of working schedule. In this study population, 61.4% of the participants work in a single-shift duty of 8 h duration, whereas 38.6% work in three shifts, the shift duration being 6 h in the morning, 6 h in the evening and 12 h in the night.

CHAPTER THREE METHODOLOGY

Methodology

✓ 3-1 Design of the study

Descriptive study was used in this study. This design was carried out in order to achieve the aims of the present study Risk factors" and musculoskeletal complaints in health workers working in clinical wards. The research conducted between the periods from 5 December 2021 to 1st April 2022.

✓ 3-2 Administrative and ethical permission .

To achieve the study objectives the following administrative steps performed:

- College of nursing in Basra award its primary acceptance.
- After getting the validity of the study questionnaire, the objective and questionnaire submitted to gain the approval of the scientific committee college.
- After getting the validity of the study questionnaire, the objective and questionnaire submitted to gain the approval of the Basra Health Department.
- To conduct the study, permissions has been obtained from medical care workers in al Basra hospitals.
- Medical care workers were asked for voluntary participation .Research objectives and benefits were explained to participate or not.

✓ 3-3 Setting of the study

The study has been conducted collecting data for the researcher through the interview questionnaire to medical care workers at al sadr teaching hospital and Qurna General Hospital.

✓ 3-4 Sample of the study

Random sampling (probability) of (100) medical care workers .65 samples were collected from al sadr teaching hospital and 35 samples were collected from Qurna General Hospital.

✓ 3-5 Instrument Description:

This scale is interview self-reported instrument. As independent variables, this study focuses on the part that includes socio-demographic data and part that Include Risk factors for the skeletal system to which the medical staff is exposed.

- **Part 1. Socio-demographic data:**

  This part contains information regarding: (Gender, age, Social status, if they have children ,have another job after working hours, have work on holidays, have low back, have evening shift, duration of experience).

- **Part 2.** Risk factors for the skeletal system to which the medical staff is exposed.

✓ 3-6 Data Collection:

The data collection started by using questionnaire format and fill out sampling was obtained by health care worker in hospital. The data collection was carried from 25 February 2022 to 1st March 2022. The process of collecting data for the researcher through the interview questionnaire to health care workers in hospitals, took time to fill the questionnaire time of 10-20 minutes and participants were asked to read the questionnaire and ask the researcher if they had questions and collected evidence by interview.

✓ 3-7 Statistical Data Analysis

Several statistical measures were used by using Statistical Package of Social Sciences (SPSS) version 26, and Microsoft excels (2016) inorder to determination the following data: Percentage (%), Standard deviation (SD).

CHAPTER FOUR
RESULTS AND DISCUSSION

Results of the Study

4 - 1 Distribution of the Variables Related Demographic Characteristics health staff, N = 100

Demographic Variables	Variables Classes	F	Percent
Age	18 – 28	40	40%
	29 – 39	37	37%
	More than 39	23	23%
	Total	100	100 %
Sex	Male	36	36%
	Female	64	64%
	Total	100	100%
Education level	High school	11	11%
	Institute	46	46%
	College	43	43%
	Total	100	100 %
Experience	1 – 9 year	63	63%
	10 – 15 year	28	28%
	More than 15	9	9%
	Total	100	100%
Marital status	Single	28	28%
	Married	72	72%
	Total	100	100%
Do you have children	No	34	34%
	Yes	66	66%
	Total	100	100%
Do you have another job after work	No	52	52%
	Yes	48	48%
	Total	100	100%
Do you have work an evening shift at work	No	46	46%
	Yes	54	54%
	Total	100	100%
Do you job have on holidays	No	46	46%
	Yes	54	54%
	Total	100	100%
Do you have low-back	No	74	74%
	Yes	26	26%
	Total	100	100%
Smoking	No	66	66%
	Yes	34	34%
	Total	100	100%

Table 1) The response was (85%) and resulted in 100 completed questionnaires.40% of participants were at age (18-28) , 37% were at age (29-39) and 23% were at age 39 or older .This study contains female (64%)and (36%) male . As regarding to the level education most of the study samples (46%) were graduate of Institute ،followed by those graduates of College (43%) and those graduates of high school (11%). As regarding to the years of Experience (63%) were 1 – 9 year ،(28%) were 10 – 15 year, (9%) were more than 15 years. Among all, 72% of the participants were married. Followed by those who are unmarried (28%). Participants have another job (48%),and who have evening shifting were (54%),Participants who have job on holidays were(45%), so the results show that 26% of Participants have lower back , only 34% participants were smokers

4-2 The results of risk factors on the Musculoskeletal System system for health staff, N= 100

Risk factors	Answers	F	Percent
Long duration of work and no rest	No	33	33 %
	Yes	67	67%
	Total	100	100%
Work under time pressure	No	67	67%
	Yes	33	33%
	Total	100	100%
very tiring work	No	53	53%
	Yes	47	47%
	Total	100	100%
Increased work pressure	No	69	69%
	Yes	31	31%
	Total	100	100%
Troubled work for unexpected reasons	No	63	63%
	Yes	37	37%

	Total	100	100%
Load affects the movement of the trunk	No	58	58%
	Yes	42	42%
	Total	100	100%
Load affects neck movement	No	56	56%
	Yes	44	44%
	Total	100	100%
Affects the Load movement of the shoulders and wrists	No	61	61%
	Yes	39	39%
	Total	100	100%
Make sudden and unexpected movements	No	62	62%
	Yes	38	38%
	Total	100	100%
Twisted trunk posture	No	76	76%
	Yes	24	24%
	Total	100	100%
Posture of Neck or wrists	No	62	62%
	Yes	38	38%
	Total	100	100%
Light bend	No	46	46%
	Yes	54	54%
	Total	100	100%
Heavy bend	No	53	53%
	Yes	47	47%
	Total	100	100%
Neck or wrists positions	No	46	46%
	Yes	54	54%
	Total	100	100%
Available working space	No	63	63%
	Yes	37	37%
	Total	100	100%
Poor or uncomfortable design	No	48	48%
	Yes	52	52%
	Total	100	100%
Long distance walking	No	68	68%
	Yes	32	32%
	Total	100	100%
The distance between one bed and another	No	61	61%
	Yes	39	39%
	Total	100	100%
Lifting	No	55	55%
	Yes	45	45%
	Total	100	100%
Pushing	No	62	62%
	Yes	38	38%
	Total	100	100%
Pulling	No	57	57%
	Yes	43	43%

	Total	100	100%
Arm or neck complaint	No	51	51%
	Yes	49	49%
	Total	100	100%
Regular back. Complaint	No	56	56%
	Yes	44	44%
	Total	100	100%
Leg complaints	No	49	49%
	Yes	51	51%
	Total	100	100%
More hard effort	No	73	73%
	Yes	27	27%
	Total	100	100%
Stand long time	No	45	45%
	Yes	55	55%
	Total	100	100%
Continuous hand use	No	53	53%
	Yes	47	47%
	Total	100	100%
Arranging tasks and making decisions on the job	No	52	52%
	Yes	48	48%
	Total	100	100%
Leaving the workplace for a period of time	No	63	63%
	Yes	37	37%
	Total	100	100%
Routine work	No	49	49%
	Yes	51	51%
	Total	100	100%
Skill level	No	57	57%
	Yes	43	43%
	Total	100	100%
Having a challenge in the work	No	58	58%
	Yes	42	42%
	Total	100	100%
New skills	No	46	46%
	Yes	54	54%
	Total	100	100%
Learn new things	No	38	38%
	Yes	62	62%
	Total	100	100%

4-3 Results the Evaluation of risk factors on the Musculoskeletal system for health staff, N= 100

Risk factors	N	Min	Max	Mean score	Std. Deviation	Assessment
Long duration of work and no rest	100	0	1	0.67	0.473	Medium
Work under time pressure	100	0	1	0.33	0.473	Low
Very tiring work	100	0	1	0.47	0.502	Medium
Increased work pressure	100	0	1	0.31	0.465	Low
Troubled work for unexpected reasons	100	0	1	0.37	0.485	Medium
Load affects the movement of the trunk	100	0	1	0.42	0.496	Medium
Load affects neck movement	100	0	1	0.44	0.499	Medium
Load Affects the movement of the shoulders and wrists	100	0	1	0.39	0.490	Medium
Make sudden and unexpected movements	100	0	1	0.38	0.488	Medium
Twisted trunk posture	100	0	1	0.24	0.429	Low
Posture of Neck or wrists	100	0	1	0.38	0.488	Medium
Light bend	100	0	1	0.54	0.501	Medium
Heavy bend	100	0	1	0.47	0.502	Medium
Neck or wrists positions	100	0	1	0.54	0.501	Medium

Available working space	100	0	1	0.37	0.485	Medium
Poor or uncomfortable design	100	0	1	0.52	0.502	Medium
Long distance walking	100	0	1	0.32	0.469	Low
The distance between one bed and another	100	0	1	0.39	0.490	Medium
Lifting	100	0	1	0.45	0.500	Medium
Pushing	100	0	1	0.38	0.488	Medium
Pulling	100	0	1	0.43	0.498	Medium
Arm or neck complaint	100	0	1	0.49	0.502	Medium
Regular back. Complaint	100	0	1	0.44	0.499	Medium
Leg complaints	100	0	1	0.51	0.502	Medium
More hard effort	100	0	1	0.27	0.446	Low
Stand long time	100	0	1	0.55	0.500	Medium
Continuous hand use	100	0	1	0.47	0.502	Medium
Arranging tasks and making decisions on the job	100	0	1	0.48	0.502	Medium
Leaving the workplace for a period of time	100	0	1	0.37	0.485	Medium
Routine work	100	0	1	0.51	0.502	Medium
Skill level	100	0	1	0.43	0.498	Medium
Having a challenge in the work	100	0	1	0.42	0.496	Medium
New skills	100	0	1	0.54	0.501	Medium
Learn new	100	0	1	0.62	0.488	Medium

things						

*Low = (0 – 0.33), Medium = (0.34 – 0.67), High = (0.68 – 1)

4-4 Results the Overall assessment for risk factors, (health staff) N= 100

Table 4.4.1 **Overall ass**essment for risk factors

Levels	**F**	**%**
Low	**5**	**15 %**
Medium	**29**	**85 %**
High	**0**	**0 %**
Total	**34**	**100 %**

The table 4) shows the high percentage regarding medium risk factors of musculoskeletal system for the health staff was 85%, while the low level was 15% and the high level of risk was 0%.

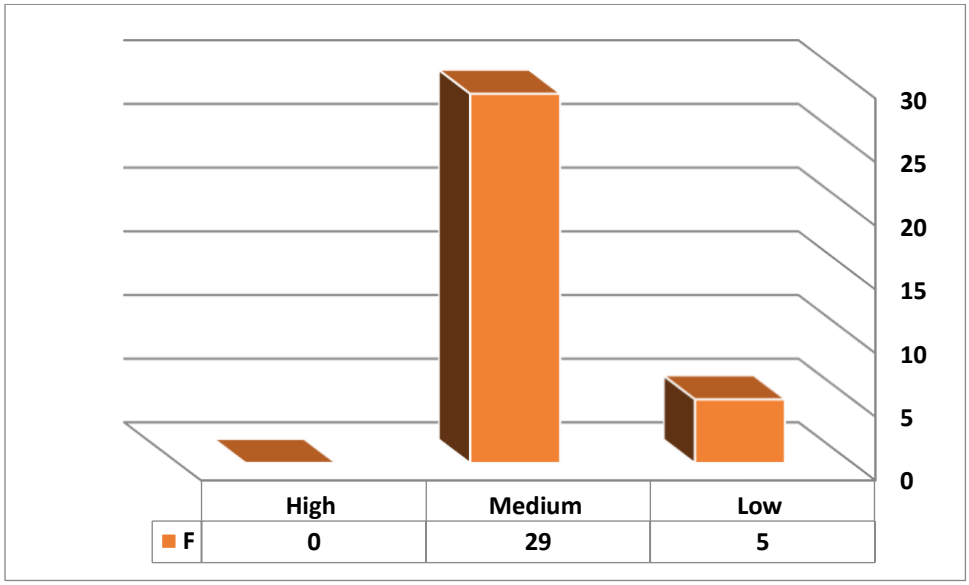

Figure 4-1) Results the Overall assessment for risk factors, (health staff)

4-5 (**Discussion)**

In this study we tried to get a better insight into the risk factors" and musculoskeletal complaints in health workers working in clinical wards.

A this study shows that (40%) their age were (18 – 28),(37%) were (29-3) and (23%) were (more than 39).This result disagree (Carugno M *et al*., 2012) who finding that (16.4%)were their age (19-29), (30.8%) at age (30-39) ,(34.0%)were ate age (40-49) and (15.1%) at age ≥ 50, this may be due to age of employment at that country.

The study shows that (64%) were female and (36%) were male. This result agrees with the findings of (Carugno M *et al*, 2012) .who found that (84.3%) female and (14.9%) male, this maybe most participants were women.

Regarding the number of years of experience (63%) was 1 – 9 year, (28%) were 10 – 15 year and (9%) were more than 15. This result disagree (Carugno M *et al*, 2012), who finding that (17.8%) were job duration 1-5 and (82.2%) were > 5. This difference in results suggests that due to new employees.

The study shows that (54%) have worked an evening shift at work and (46%) not have. This result agrees with (Sandul Y *et al*, 2014) who finding (61.4%) have work an evening shift at work and (38.6%) not have ,this maybe most participants They prefer to work at night shifts .

The study shows that (26%) have low back and (74%) not have. This result agrees with (Josephine *et al*, 1996) who finding that (34%) have low back and (66%) not have .This suggests that differences in age (Few elderly people) or duration of Job of the health staff

The study shows that(34%) were smoker and (66%) were not this in other study (Sandul Y *et al*, 2014) who finding that (3.6%)were smoker and (96.4%) not smoker this maybe most of the participants were women and did not smoke cigarettes.

the study show that prevalence of arm or neck complaints (49%), In other study, (Lagerstrom *et al*,2012) who finding that (prevalence of Arm or neck complaints (30%), This could be due to the type of questioning: Lagerstrom *et al* asked for information on ongoing musculoskeletal symptoms, the proportion of subjects with regular back complaints found in this study (44%), In other study (Stubbs *et al*, 2014) who finding that prevalence of regular back complaints were (45%) This could be due to different definitions of back pain or back complaints in the various studies.

CHAPTER FIVE
CONCLUSION
&RECOMMENDATIONS

5-1 Conclusion

1. This study provided risk factors" and musculoskeletal complaints in health workers working in clinical wards Through self-reported (subjective) Surveys
2. This study explored the demographic information and risk of skeletal system on health staff
3. Found that The proportion of female more than male
4. Majority of samples were at age (18-28)
5. Majority of samples were work at evening shift.
6. Majority of samples have work on holidays.
7. A small proportion of the participants have lower back
8. The outcome for those exposed to a medium risk score was 85%.

5-2 Recommendations

1. The study recommended that education, awareness and training programs on prevention risk and complaint musculoskeletal be made mandatory for healthcare professionals especially for the high risk groups such as nurses, dentists and physiotherapists in order to reduce the occurrence of complaint musculoskeletal among them not only for their better health but also, importantly to promote efficiency in patient care.
2. An integrated health promotion model should be planned for healthcare professional.

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Appendixes I

اسماء السادة الخبراء للحكم على صلاحية الفقرات المعدة للقياس

التسلسل	الاسم	مكان العمل	اللقب العلمي	الشهادة	عدد اعوام الخبرة
1	أ.د محفوظ فالح حسن	كلية التمريض/ جامعة البصرة	استاذ	دكتوراه	22 سنة
2	د. سجاد سالم	كلية التمريض / جامعة البصرة	استاذ. دكتور	دكتوراه	25 سنة
3	د.وصفي ظاهر	كلية التمريض / جامعة البصرة	ا.م.د	دكتوراه	30< سنه
4	د.واثق فرعون	كلية التمريض / جامعة البصرة	مدرس	دكتوراه	12سنة
5	د.لؤي عبد الواحد	كلية التمريض / جامعة البصرة	استاد مساعد	ماجستير	25سنة
6	د.فرحان لايد	كلية التمريض / جامعة البصرة	مدرس	ماجستير	15< سنة

Appendixes II

"Risk factors" and musculoskeletal complaints in health workers Working in clinical wards.

First: Demographic characteristic

Age

- 28 – 18
- 38 – 29
- Over 39 years old

Gender

- Male
- Female

Level education

- Secondary school
- Diploma
- College

Duration of employment

- 1 _ 9years
- 10 – 15Years
- Over than 15 years

Material status

- Married
- Unmarried

Do have children?

- Yes
- No

Do you have another job after work?

- Yes
- No

Do you have an evening shift at work?

- Yes
- No

Do you have work on holidays?

- Yes
- No

Do you have Low-back?

- Yes
- No

Are smoker?

- Yes
- No

Second: ***Risk factors to the skeletal system to which nursing staff are exposed***

	Items	Verbal	√
1	Repetitive working pressure	Long duration of work and no rest	
		Work under time pressure	
		Very tiring work	
		Increased work pressure	
		Troubled work for unexpected reasons	
2	Dynamic load		
		Trunk movements	
		, movements of the neck,	
		movements of shoulders or wrists,	
		reaching, make sudden and/or unexpected movements,	
3	Continuous work constitutes a constant daily load		
		Twisted trunk postures	
		Postures of neck or wrists	
		Light bent, ,	
		Heavily bent,	
		twisted trunk positions,	
4	repetitive working pressure		
		Work in the same critical situations continuously,	
		It does not require the same movements with the trunk, arms, hands, wrists or legs,	
		Make small movements using the hands at a high frequency	
		repetitive working pressure	
5	Ergonomic environment		
		Available working space,	
		Poor or uncomfortable design	
		Long distance walking	
		The distance between one bed and another	
6	Force exertion		
		Lifting	
		Pushing	
		Pulling	
7	Skeletal system complaint		
		Arm or neck complaint	
		Regular back. Complaint	
		Leg complaints	
8	Force exertion		
		More hard effort	
		Stand long time	
		Continuous hand use	
9	Determine workplace,,		
		The Order of tasks and making decisions on the job	

		Leaving the workplace for a while	
10 job content and autonomy			
		Routine work	
		Skill level	
		New skills	
		Learn new things	

Appendixes III

وزارة الصحة
دائرة صحة البصرة
مركز التدريب والتنمية البشرية
لجنة البحوث

رقم القرار٢٠٢٢/٢١١
تاريخ القرار٢٨ /٢٠٢٢/٣

قرار لجنة البحوث

درست لجنة البحوث في دائرة صحة البصرة مشروع البحث ذي الرقم(٥٨١) المعنون:
(عوامل الخطر ومشاكل العضلية الهيكلية لدى الكوادر الصحية العاملة في وحدات السريري) والمقدم من الباحثين
(زينب تحسين محمد)–(زينب محسن عبد الخالق) دراسات اولية كلية التمريض – جامعة البصرة
بتاريخ ٢٠٢٢/٣/٢٨ وقررت:

"الموافقة على تنفيذ مشروع البحث بصيغته المقدمة ولأمانع من تنفيذه في مؤسسات الدائرة."

الطبيب الاختصاص
د. علي كاظم قاسم
مقرر لجنة البحوث / دائرة صحة البصرة
/ ٣/ ٢٠٢٢

دائرة صحة البصرة
مركز التدريب والتنمية البشرية
لجنة البحوث

المرفقات :
لا يوجد

الملاحظات:
- تم تخويل رئيس لجنة البحوث او مقرر اللجنة للتوقيع على هذا القرار استنادا الى النظام الداخلي للجنة البحوث .
- الموافقة تعني ان مشروع البحث قد استوفى المعايير الأخلاقية والعلمية لإجراء بحث والمعتمدة في وزارة الصحة، اما التنفيذ فيعتمد على التزام الباحث بتعليمات المؤسسة الصحية التي سينفذ فيها البحث. وعلى الباحث التواصل مع مسئول البحوث في المؤسسة الصحية التي يجرى بها البحث واطلاعه على مجريات البحث بشكل دوري ولحين انتهاء البحث.

عوامل الخطر "والمشاكل العضلية الهيكلية لدى العاملين الصحيين العاملين في الوحدات السريرية

خلفية البحث

من المعروف أن مهن الرعاية الصحية معرضة لخطر كبير للإصابة بالاضطرابات العضلية الهيكلية كما أنها معرضة للمخاطر المهنية (على سبيل المثال ، الاضطرابات العضلية الهيكلية المرتبطة بالعمل تكون مرتبطة بهذه العوامل.

الهدف

كان الهدف من هذا البحث هو البحث في عوامل الخطر وتحديد مدى انتشار المشاكل العضلية الهيكلية في العاملين الصحيين العاملين في الوحدات السريرية والبحث في العلاقة بين هذه المشاكل ومتغيرات العمل المختلفة والشخصية.

المنهجية

تم استخدام الدراسة الوصفية في هذه الدراسة. تم تنفيذ هذا التصميم من أجل تحقيق أهداف الدراسة الحالية عوامل الخطر "والمشاكل العضلية الهيكلية للعاملين الصحيين العاملين في الوحدات السريرية. تم إجراء البحث بين الفترة من 5 ديسمبر 2021 إلى 1 أبريل 2022.تركز هذه الدراسة على الجزء الذي يتضمن البيانات الاجتماعية والديموغرافية والجزء الذي يتضمن عوامل الخطر للجهاز الهيكلي الذي يتعرض له الطاقم الطبي.

النتائج

كانت الاستجابة (85٪) ونتجت عن 100 استبيان مكتمل ، 40٪ من المشاركين كانوا في سن (18-28) ، 37٪ كانوا في سن (29-39) و 23٪ كانوا في سن 39 أو أكبر. (64٪) كانو إناث و (36٪) ذكور. فيما يتعلق بمستوى التعليم ، كانت معظم عينات الدراسة (46٪) من خريجي المعهد ، واضهرت الدراسة الحالية أن 49٪ يعانون من مشاكل في الذراع أو الرقبة ، و 44٪ يعانون من مشاكل منتظمة في الظهر و 51٪ يعانون من مشاكل في الساق. تقييم عوامل الخطر على نظام الهيكل العظمي للعاملين الصحيين ، وأظهرت النتيجة أن النسبة المئوية المرتفعة لعوامل

الخطر المتوسطة للجهاز العضلي الهيكلي للعاملين الصحيين كانت 85٪ ، بينما مستوى الخطر المنخفض كان 15٪ ومستوى الخطر المرتفع كان 0٪. وجد أن (67٪) يعملون لفترة طويلة ولا توجد فرصة لأخذ استراحة من العمل ، و (33٪) يعملون تحت ضغط الوقت.

الاستنتاجات.

قدمت هذه الدراسة عوامل الخطر "والمشاكل العضلية الهيكلية في العاملين الصحيين العاملين في الوحدان السريرية من خلال مسح (شخصي) المبلغ عنه ذاتيًا ، استكشفت هذه الدراسة المعلومات الديموغرافية ومخاطر الجهاز الهيكلي على الموظفين الصحيين ، ووجد أن نسبة الإناث كانت أكثر من الذكور ، كانت غالبية العينات في سن (١٨-٢٨) ، وكانت غالبية العينات تعمل في الخفر الليلي. وكانت غالبية العينات تعمل في أيام العطل. ونسبة صغيرة من المشاركين لديهم تحدب في الظهر ، وأظهرت النتيجة أن النسبة المئوية المرتفعة لعوامل الخطر المتوسطة للجهاز العضلي الهيكلي للعاملين الصحيين كانت ٨٥٪ .

التوصيات

يوصى بجعل برامج التثقيف والتوعية والتدريب حول الوقاية من المخاطر والمشكلات في الجهاز العضلي الهيكلي لمهنيي الرعاية الصحية .

عوامل الخطر "والشكاوى العضلية الهيكلية لدى العاملين الصحيين العاملين في الوحدات السريرية.

مشروع بحثنا

مقدم الى مجلس كلية التمريض جامعة البصرة

استيفاء جزئي لمتطلبات درجة البكالوريوس في علوم التمريض

من قبل الطالبات

زينب محسن عبد الخالق

زينب تحسين محمد

السنة الرابعة - ٢٠٢١-٢٠٢٢

باشراف الدكتور

د.محمد عبد الرضا المياحي

البصرة 2022