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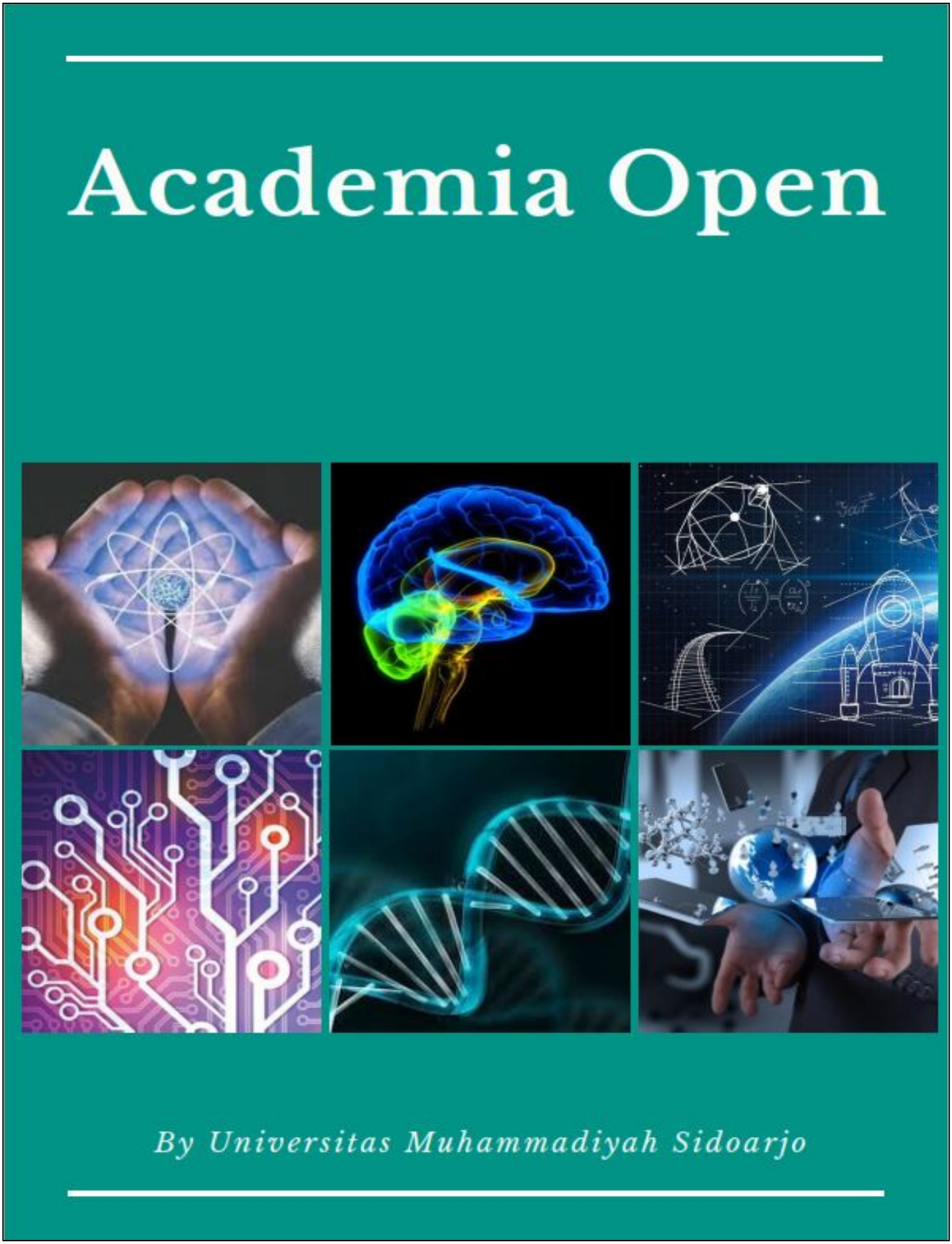

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Prevalence and Risk Factors of Musculoskeletal Complaints Among Clinical Healthcare Workers

Prevalensi dan Faktor Risiko Keluhan Muskuloskeletal di Kalangan Pekerja Kesehatan Klinis

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Abstract

This study investigated the prevalence and risk factors of musculoskeletal complaints among health workers in clinical wards, examining the relationship between these complaints and various work-related and personal variables. Conducted between December 2022 and April 2023, this descriptive study utilized a non-probability, voluntary sample of 100 health workers. Results indicated that 26% of participants reported lower back pain, 49% arm or neck complaints, 44% regular back pain, and 51% leg complaints. Key risk factors included extended work hours without breaks (67%), time pressure (33%), lifting (45%), and stooping (54%). Despite high medium-risk exposure (85%), no participants reported high-risk levels. This study highlights the significant burden of WMSDs among clinical healthcare workers and underscores the need for interventions to reduce duce these risks and improve occupational health.

Highlight:

- Prevalence: A significant portion of healthcare workers reported musculoskeletal complaints, with 51% experiencing leg pain and 49% arm or neck pain.
- Risk Factors: Key risk factors identified include prolonged work hours without breaks (67%), time pressure (33%), lifting (45%), and stooping (54%).
- Implications: The study underscores the need for targeted interventions to mitigate WMSDs and improve the occupational health of clinical healthcare workers.

Keywords: Musculoskeletal Disorders, Healthcare Workers, Risk Factors, Occupational Health, Clinical Wards

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Introduction

Healthcare professionals are known to be at high risk for musculoskeletal disorders and they are exposed to occupational hazards and risks (e.g., Work-related musculoskeletal disorders (WMSDs) are associated with these factors [1]. Work postures and movements, Repetitiveness and pace of work, Force of movements. Lack of influence or control over one's job. Discomfort and fatigue if they are maintained for long periods. Standing, for example, is a natural body posture, and by itself poses no particular health hazards. However, working long periods in a standing position can cause sore feet, general muscular fatigue, and lower back pain. In addition, improper layout of work areas, and certain tasks. Can make health workers 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 [2, 3]. Work involving repeated movement over and over is very tiring because the health worker cannot fully recover in the short periods between movements. Eventually, it takes more effort to perform the same repetitive movements. When the work activity continues despite the fatigue, injuries can occur [4].

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 [5]. Lack of rest may induce injury risks. Musculoskeletal disorders (MSDs) 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 [6]. 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 MSDs include pain, soreness, swelling, and restriction of posture angle. In addition to acute trauma, MSDs are mostly caused by chronic injuries attributable to long-term poor posture, repetitive movements, improper force exertion, and overloading [7].

In the healthcare sector, studies with thousands of workers show that high physical exertion during patient handling and transfer increases the risk of developing chronic low-back and knee pain in workers without prior pain [8] Sickness absence [9], Disability pension [10].

Individual factors,while the physical workload is the most substantial direct risk factor for MSDs, individual factors also contribute **(**AgeandLifestyle), as psychological factors (conflicting instructions and responsibilities, time pressure, or the Lack of control over the worker’s work) [11].

Some of the most common causes of musculoskeletal pain and movement problems are (Aging, Arthritis Pain, inflammation, and joint stiffness result from arthritis. Back problems: Back pain and muscle spasms can result from muscle strains or injuries like a herniated disk. Some conditions, including spinal stenosis and scoliosis, cause structural problems in your back, leading to pain and limited mobility. Cancer: Several types of cancer affect the musculoskeletal system, including bone cancer. Tumors that grow in connective tissue (sarcomas) can cause pain and problems with movement [12].

Congenital abnormalities: Also known as birth defects, congenital abnormalities can affect the body’s appearance, structure, and function. Disease: A wide range of diseases affect how bones, muscles, and connective tissues work. Some, such as osteonecrosis, cause bones to deteriorate and die. Other disorders, such as fibrous dysplasia and brittle bone disease (osteogenesis imperfecta), cause bones to fracture easily [13]. Injuries: Hundreds of injuries can affect bones, cartilage, muscles, and connective tissues. Injuries can result from overuse, such as carpal tunnel syndrome, bursitis, and tendinitis. Sprains, muscle tears, broken bones, and injuries to tendons, ligaments, and other soft tissues can result from accidents and trauma [14].

Methods

A descriptive study was used in this study.This design was carried out to achieve the aims of the present study Risk factors” and musculoskeletal complaints in health workers working in clinical wards. The research was conducted between the periods from 5 December 2022 to 1st April 2023. The study was conducted by collecting data for the researcher through the interview questionnaire to medical care workers at Al-Sadr Teaching Hospital and Qurna General Hospital.

Random sampling (probability) of (100) medical care workers. Sixty-five samples were collected from Al-Sadr Teaching Hospital and 35 samples were collected from Qurna General Hospital. This scale is an interview self-reported instrument. As independent variables, this study focuses on the part that includes socio-demographic data and the part that includes risk factors for the skeletal system to which the medical staff is exposed.

The data collection started by using a questionnaire format and fill-out sampling was obtained by health care workers in the hospital Several statistical measures were used by using Statistical Package of Social Sciences (SPSS) version 26, and Microsoft Excel (2016) to analyze and evaluate the results of the study.

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Results and Discussion

A. Results

Table 1: Descriptive Statistics of Demographic Variables

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 years	63	63%
	10 – 15 years	28	28%
	More than 15	9	9%
	Total	100	100%
Material 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 worked 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%

Figure 1. ***Distribution of the Variables Related Demographic Characteristics health staff, N = 100***

According to this table, the study shows 40% of participants were at age (18-28). This study contains females (64%). As regards the level of education most of the study samples (46%) were graduates of the Institute. As regards the years of Experience (63%) were 1 – 9 years. Among all, 72% of the participants were married. Participants who have another job (48%), and who have evening shifting (54%), and Participants who have a job on holiday (45%), so the results show that 26% of Participants have lower back, and only 34% of participants were smokers.

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Table 2: descriptive statistics of risk factors on the Musculoskeletal system			
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%
The 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%

Figure 2. ***The results of risk factors on the Musculoskeletal Cryptosystem for health staff, N= 100 (Part 1)***

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	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%
	No	63	63%

Figure 3. ***The results of risk factors on the Musculoskeletal Cryptosystem for health staff, N= 100 (Part 2)***

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Leaving the workplace for a period of time	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%

Figure 4. ***The results of risk factors on the Musculoskeletal Cryptosystem for health staff, N= 100 (Part 3)***

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Table 3: Mean score and assessment for each question about risk factors in the Musculoskeletal system family

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

Figure 5. ***Results of the Evaluation of risk factors on the Musculoskeletal system for health staff, N= 100 (Part 1)***

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More hard effort	100	0	1	0.27	0.446	Low
Stand a 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 some 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 things	100	0	1	0.62	0.488	Medium

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

Figure 6. ***Results of the Evaluation of risk factors on the Musculoskeletal system for health staff, N= 100 (Part 2)***

Table 4.4.1 Overall assessment of risk factors		
Levels	F	%
Low	5	15 %
Medium	29	85 %
High	0	0 %
Total	34	100 %

Table 1. ***Results of the Overall assessment for risk factors , (health staff) N= 100***

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

B. 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.

This study shows that (40%) their age was (18 – 28), (37%) were (29-39), and (23%) were (more than 39). This result disagrees with [15] who found that (16.4%) were at the age (19-29), (30.8%) at the age (30-39), (34.0%) were at age (40-49) and (15.1%) at age ≥ 50, this may be due to the age of employment at that country.

The study shows that (64%) were female and (36%) were male. This result agrees with the findings of [16] who found that (84.3%) were female and (14.9%) were male, this may be because most participants were women.

Regarding the number of years of experience (63%) were 1 – 9 years, (28%) were 10 – 15 years, and (9%) were more than 15. This result disagrees [17], who found 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 [18] who found (61.4%) have worked an evening shift at work and (38.6%) did not have, this may be because most participants prefer to work night shifts.

The study shows that (26%) have low back and (74%) do not have. This result agrees with [19] who found that (34%) have low back and (66%) do not. This suggests that age differences (Few elderly people) or duration of Job of the health staff.

The study shows that (34%) were smokers and (66%) were not another study found that (3.6%) were smokers and (96.4%) were not smokers this may be because most of the participants were women and did not smoke cigarettes.

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the study shows that prevalence of arm or neck complaints (49%), In another study [20] found that (the prevalence of Arm or neck complaints was (30%), This could be due to the type of questioning [20] asked for information on ongoing musculoskeletal symptoms, the proportion of subjects with regular back complaints found in this study was (44%), another study found that the prevalence of regular back complaints was (45%). This could be due to different definitions of back pain or back complaints in the various studies.

Conclusion

This study provided risk factors" and musculoskeletal complaints in health workers working in clinical wards Through self-reported (subjective) Surveys, this study explored the demographic information and risks of the skeletal system on health staff and found that the proportion of females more than males, Majority of samples were at age (18-28), Majority of samples were worked at evening shift. The majority of samples have work on holidays. A small percentage of the participants have lower back, The outcome for those exposed to a medium risk score.

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