

Knowledge and Awareness of Work-Related Musculoskeletal Disorders and Office Ergonomics among Bankers in Maval Region

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Abstract

Objective: Primary Objective: To analyse the knowledge and awareness of work-related musculoskeletal disorders among bankers in Maval region using a self-administered survey-based questionnaire.

To analyse the knowledge and awareness of office ergonomics among bankers in Maval region using a self-administered survey-based questionnaire.

Secondary Objective: To find association between the knowledge and awareness of work-related musculoskeletal disorders and office ergonomics among bankers in Maval region and their age as a part of demographic data.

Method: It was a cross-sectional study in which a self-made questionnaire was used to know the knowledge and awareness of work-related musculoskeletal disorders and office ergonomics among bankers. Google form link of the same was mailed to the 252 participants by making a list of all banks in Maval region, approached in person and telephonically and their data was collected. After collecting the data, it was analysed statistically and representation of qualitative characteristics like age, gender was represented through graphical pie charts. The survey results were shown as percentage in the form of graphical representation through pie charts and in the tabular form.

Results: Through results it was seen that bankers were aware about work-related musculoskeletal disorders and office ergonomics but were not implementing it their working tenure.

Keywords: Awareness, Office Ergonomics, Knowledge, Work-Related Musculoskeletal Disorders.

Introduction

In India Banking is the lifeline of the nation and its people.¹⁰ Banking has helped in developing the vital sectors of the economy and lead to a fresh start

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of progress on the Indian horizon¹⁰. With the advent of computers in 21st century, there is an increased dependency on computers¹. Even in Banking Industry there is shift of manual physical work to computerised sedentary work. Musculoskeletal disorders (MSDs) consist of minor physical injuries/disorders¹⁰. It include variety of conditions that affect the muscles, bones, ligaments and joints¹⁰. The severity of the MSD can vary. Pain and discomfort may interfere with everyday activities. MSDs are extremely common, and the risk increases with age. Early diagnosis is the

key to minimize the pain which will further decrease bodily damage¹⁰. Rapid technological developments, especially in the use of electronic data, have affected both workers and the work place (Jensen C et al, 2002)¹⁰. Work-related Musculoskeletal Disorders can affect shoulders, arms, elbows, wrists, hands, back, legs and feet. Its mechanism of injury is by forceful or repetitive movements or a poor working posture¹⁰. Symptoms include tender-ness, aches and pains, tingling, stiffness and swelling¹⁰. Lower and upper back pain and muscle spasm could be due to incorrect seating, which also affects the cervical spine and neck muscles leading to pain¹⁰. Increased forces across the joints plays a major role in the relationship between a high BMI and weight-bearing joints (back and lower extremities), compared to symptoms in non-weight-bearing joints (in the shoulder/neck and upper extremities)⁹. Computer usage has been responsible to increased risk of musculoskeletal disorders. In some individuals, pain may recur or persist, leading to long-term physical disability, reduced work capacity, and sickness absence. Banking sector employees are found to be working for longer duration on computer assuming Awkward Postures, and also the correct work ergonomics are not followed at majority of work stations in the banks. Due to lack of a sound ergonomic design, increased work for prolonged periods can adversely develop musculoskeletal disorders (MSDs)⁸. A brief knowledge of the principles of ergonomics of workstation setup and exercises can help in combating work related discomfort and maximize work productivity.⁵ Ergonomics is a relatively new concept in India yet to be considered an integral component of most workplaces. The findings got through the current study can establish a firm brickwork for future research and ergonomic training in the banking setups⁵. In view of this, the present study is carried to know the knowledge and awareness about the work-related musculoskeletal

disorders and the knowledge and awareness about office ergonomics among bankers.

Materials and Methodology

It was a cross-sectional study in which a self-made questionnaire was used to know the knowledge and awareness of work-related musculoskeletal disorders and office ergonomics among bankers in Maval regions. Ethics committee clearance was taken prior to start of the study. A online self-made questionnaire was made through google form. Google form link of the same was mailed to the 252 participants by making a list of all banks in Maval region, approached in person and telephonically and their data was collected. The google form did not reveal the identity of the participant. After completion, the data was analysed statistically and representation of qualitative characteristics like age, gender was represented through graphical pie charts. The survey results were shown as percentage in the form of graphical representation through pie charts. The present study was conducted from month January 2021-May 2021 in MAEER's Physiotherapy College, Talegaon- Dabhade, Pune.

Outcome measure

The questionnaire contains 3 domains:

Domain 1: Demographic data (Age, Gender, BMI, Lifestyle, Job Tenure, Type of Branch)

Domain 2: Questions on Awareness about work-related musculoskeletal disorders like Questions on Work-related musculoskeletal disorders and Repetitive stress injuries.

Domain 3: Questions about Office Ergonomics and Work Environment related factors like Office Ergonomics, Workstation design, Working hours, Ergonomic Chair. All questions were relevant and closed ended, framed in a yes or no pattern and also in a Likert scale.

Results

The following is the demographic data of the bankers from the banks of Maval region which were included in the study.

Table no.1: Demographic data:

DESCRIPTIVE	CRITERIA	FREQUENCY	PERCENTAGE
Gender	Male	122	48.4
	Female	130	51.6
Age	26-45	171	68
	46 -60	81	32
BMI	Normal (18-24.9)	103.	41
	Overweight(25-29.9)	101	40
	Obese(30->40)	48	19
Lifestyle	Active	125	49.6
	Sedentary	127	50.4

Table no.2: Representation of commonly affected regions of WRMSD in Bankers:

AFFECTED REGIONS	PERCENTAGE
1.Neck	28.2%
2.Lower back	22.6%
3.Upper back	10.7%
4.Shoulder	10.7%
5.Knee	9.1%

Table no.3:Representation of factors important for smooth working at bank:

FACTORS IMPORTANT FOR A SMOOTH WORKING AT BANK	PERCENTAGE
1.Work area design	5.6%
2.Body posture	12.3%
3.Working chair	4.4%
4.Health	4%
5.Lighting	0.4%
6.Working hours	2.4%
7.Work environment	8.3%
8.Rest breaks	5.6%
9.All of the above	57.1%

Table no.4:Representation of Awareness of ergonomically correct Workstation:

QUESTIONS	YES	NO
1.Aware about correct arrangement of computer, mouse and keyboard.	67.9%	32.1%
2.Know the distance to fix the monitor screen while working.	57.9%	42.1%
3.Aware about ergonomically designed keyboard.	39.7%	60.3%
4.Know to keep the objects within reach zone.	76.2%	23.8%
5.Aware about the height of table.	63.5%	36.5%

Table no.5: LIKERT SCALE: Likert scale ranging from 1 to 5, for each statement circle from 1 to 5 where, 1-strongly agree 2-agreed 3-neutral 4-disagree 5-strongly disagree.

QUESTIONS	1	2	3	4	5
1.I am aware about consulting physio for WMSK.	31.3%	25%	22.6%	11.9%	9.1%
2.I am aware that exercise is the role to MSK.	42.9%	18.7%	19%	8.7%	10.7%

Cont... Table no.5: LIKERT SCALE: Likert scale ranging from 1 to 5, for each statement circle from 1 to 5 where, 1-strongly agree 2-agreed 3-neutral 4-disagree 5-strongly disagree.

3.WMSD increases employee absentism.	39.7%	18.3%	19.4%	10.7%	11.9%
4.My job needs me frequently standup for longer period.	18.7%	16.7%	22.6%	22.2%	20.2%
5.My job needs me to carry heavy objects.	9.9%	12.7%	28.6%	20.2%	28.6%
6.My bank should undertake ergonomic sessions.	42.1%	12.7%	23.4%	10.3%	11.5%

Discussion

The questionnaire was completed and returned by 252 out of 255 bank employees. In this study over 51.6% were females and 48.4% were males. Table 1 showed the BMI of Bankers which reflected that 103 bankers were having normal BMI which ranges from 18-24.9 and 101 of them were overweight and 48 of the bankers from the total sample size were obese. The bankers were divided into two age groups, Group1: 26 years-45 years of age and Group2: 46 years -60 years of age. Group1 consisted of 171 bankers i.e 68% of the total sample size and Group2 consisted of 81 bankers i.e 32% as shown in Table no.2. Most of the bankers were of young and middle age. Therefore, their mean age was 40. The lifestyle pattern of bankers reflected that, 50.4% of the bankers were sedentary and 49.6% of the bankers were active performing exercise of any form, for at least 30 mins thrice a week. Domain 2 consisted of questions on work-related musculoskeletal disorders, where 73.8% of the bankers were aware about the

work-related musculoskeletal disorders while 80.2% of the population have experienced it in their working tenure. Among the bankers who have experienced work-related musculoskeletal disorders, Neck region was the most commonly affected (28.2%). Following are serial of occurrence were lower back (22.6%), upper back (10.7%), shoulder was about 10.7% and knee about 9.1%. So, focusing to the fact that Neck and lower back were most affected region and upper back, shoulder, wrist, hip, knee, ankle were least affected regions (Table no.2) in accordance with previous literature given by Seema Patel et al¹¹. About 42.50% of bankers found that all the risk factors like faulty body postures, Repeated movements, Increased job demand, Reduction in rest breaks, Poor work station, Duration of work, associated stress are responsible for work-related musculoskeletal disorders. This closely points to the fact that all risk factors are equally responsible for occurrence of work-related musculoskeletal disorders and same has been opined by most of the bankers in the study. This is in the

accordance with previous study given by Kristel oha et al⁷, Revati Deshpande¹². In this Domain some repetitive stress injuries questions were also included, so about 60.3% of the bankers were aware about the repetitive stress injuries, 54.4% had experienced it in their work tenure. About 79.8% of the bankers are aware that repeated movements can leads to Repetitive stress injuries and 44.8% of bankers have the knowledge about the preventive strategies of repetitive stress injuries in accordance with previous literature given by Revati Deshpande¹². In Domain 3 questions were included on office ergonomics, about 61.1% of the bankers had knowledge about the concept of office ergonomics. 84.1% of the bankers felt that office ergonomics has a important and crucial role in banking sector to avoid work-related musculoskeletal disorders. From table no.3, 57.1% of the bankers felt that all factors like work area design, Body posture, Working chair, Health, Lighting, working hours, work Environment and Rest breaks are important for a smooth working at banking sector in accordance with previous literature given by Revati Deshpande¹². Through table no.4, it suggested that 67.9% of the bankers were aware about the correct arrangement of computer, mouse and keyboard to influence a smooth working. About 57.9% of the bankers were aware about the distance to fix the monitor screen while working. 60.3% of the bankers were not aware about the ergonomically designed keyboard. About 76.2% of the bankers were aware that the required objects should be kept within their reaching zone in accordance with previous study given by Revati Deshpande¹². 63.5% of the bankers were aware that the height of the table should be correct while working. Some questions were asked on working hours, 51.6% of the bankers were not aware about the 20-20 rule. The rule is defined as taking regular breaks every 20 minutes by looking at object 20 feet away instead on the screen in near for 20 seconds.(Burak Turgut)¹³. About 83.7% of the bankers felt that

job rotation can enhance the work productivity in the banking sector. About 33.7% of the bankers felt that <2hrs time is the ideal time to sit at one place while working in accordance with previous literature given by Revati Deshpande¹². About 84.9% of the bankers were aware that use of adjustable chair in bank can increase in work performance. 81.7% of them were aware that office chair should include all supports like neck, upper back, lower back, knee and footrest. 59.5% of the bankers felt that upright sitting is the ergonomically correct posture to sit while working.

Questionnaire consisted of likert scale shown in table no.5; which indicated that 31.3% of the bankers were aware about consulting physiotherapist for the work-related musculoskeletal disorders, 42.9% of the bankers were aware that the exercise is the key role to musculoskeletal disorders, this is the chief finding that the study postulated. 42.1% of the bankers were strongly agreeing that their bank should undertake ergonomic sessions for them. From the knowledge thus gained about the awareness of exercise and Physiotherapist consultation among bankers, there emerges an ardent need to conduct Physiotherapy sessions and short exercise plans to be given to bankers. 39.7% of the bankers strongly agrees to that fact that work-related musculoskeletal disorders can lead to increase in employee absenteeism in accordance with previous literature given by MEH Larsson, L. Nordeman, S. Bernhardsson⁸.

Association of age was done with the awareness and knowledge of work-related musculoskeletal disorders and office ergonomics using chi-square test. Bankers were divided into two age groups i.e below 45 years and above 45 years. Age was associated with awareness of WRMSD's, awareness of RSI, awareness of office ergonomics and awareness of role of office ergonomics in bank, Out of which the Association of awareness of office ergonomics with age was statistically significant @ $p=0.0006$

($p < 0.05$) @ Chi-square value=11.761. This concluded that younger population like below 45 years of age of bankers are more aware about the ergonomics as they exhibited keen knowledge through various social media platforms being technologically sound population as compared to their senior counterparts.

Conclusion

From the above findings, the study highlights to the fact that majority of the bankers are aware and possess the knowledge about WRMSD's and the office ergonomics. However, what is seen is that the implementation of the correct office ergonomics, practicing correct exercises, taking rest breaks in between long hours of work is lacking in bankers due to workload. So, a Physiotherapist can be appointed by respective banks who can conduct a short ergonomic session which can include exercises, stretches, various methods to deal with the workplace injuries so that they can use it in their daily work routine to minimize the work-related musculoskeletal disorders/injuries and can improve their work productivity and enhance their working morale.

Limitation:

This study was done on smaller sample size. It was done in only Maval region, other regions in Pune can be considered. This study only checks, how much the bankers are aware about the WRMSD's and Office Ergonomics. No further guidance were included about the ergonomics and work-related musculoskeletal disorders and preventive strategies for it. No Interventions were done and no ergonomic sessions were taken.

Clinical Implication and Future Goals:

Further studies can be done by educating the bankers to follow correct ergonomics and exercises thus, enhancing their working morale in the banks. This will also help to reduce the risk of development of

work-related musculoskeletal disorders by enhancing the employee work productivity and making the bankers ergonomically sound. Further studies can be done in large sample size. Future studies can be done in whole Pune region. Long term follow-up studies can be done by giving ergonomic exercises to the bankers and preventive strategies which will improve their working skills. In future, studies can be done to find association of the knowledge and awareness of work-related musculoskeletal disorders and office ergonomics among bankers with their lifestyle and BMI as a part of demographic data.

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