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ASSESSING THE EXISTENCE OF WORK RELATED MUSCULOSKELETAL DISORDERS AND THEIR INFLUENCES ON OFFICE WORKERS IN SOME SELECTED WOREDAS OF NORTH SHOWA ZONE

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Abstract

The purpose of this study was to investigate the existence of work related musculoskeletal disorders and their influences on office workers in some selected woredas of North Showa Zone. Currently work related musculoskeletal disorders are becoming the disaster problems facing our world. This study attempted to assess the existence of upper body work related musculoskeletal disorders and their influences on office workers. Subject in this study were 172 secretarial and 171 administrators were selected from the total population of 407, and 407 respectively. The total sample sizes were 816 from this 343(42%) sample respondents were taken among these 282 respondents chosen for questionnaire and 61 respondents for interview. Each office has been selected by stratified sampling based on purposively expected availability of information and participants were categorized according to their demographic placement such as sex, age, education and type of job. A descriptive survey study was used to carry out this research. As a methods of data gathering tools; questionnaire, interview, and document analysis were employed. To analyze the collected data, both qualitative and quantitative methods such as descriptive statements and frequency counts, and percentage were on use respectively. Results of the study exposed that North Showa Zone office worker: -have lack of sufficient knowledge, lack of regular exercise, hang around long period of time on computer, remaining long period of time on the same work, suffering a pain on their upper body. To overcome these offices those are found in North Showa Zone should help their workers to have information about WMSD and its prevention mechanisms are important to prevent and also to solve the problem.

Key words: - upper body pain, office workers, physical exercise, musculoskeletal disorders, work related, Ethiopia.

1. Introduction

Work related Musculoskeletal disorders (WMSDs) are diseases related and/or aggravated by work that can affect the upper body part and lower body part. WMSD can be defined by impairments of bodily structures such as muscles, joints, tendons, ligaments, nerves, bones and the localized blood circulation system, caused or aggravated primarily by work it-self or by the work environment World Health Organization, (1985).

Musculoskeletal disorders in general have become increasingly common worldwide during the past decades. It is a common cause of work-related disability among office workers with substantial financial consequences due to workers' compensation and medical expenses (Andersson, 1999).

Work-related musculoskeletal disorders (WMSDs) related with repetitive and demanding working conditions continue to represent one of the biggest problems in office workers in the world.

Logically the employees are one of the stake holders that help the country to achieve its goals in every sustainable developmental sector. So now a day's many employees are challenged by work-related musculoskeletal disorders. These might be the nature of the work they engaged like office secretarial, managers and others who forced by their nature of work to sit for a long period of time. So the purpose of this study is to deal with the existence and its effects of work related musculoskeletal disorders of office workers and also to suggest some attainable alternatives and computable recommendations in some selected woredas of north showa zone. It is also expected to provide valuable support for improving the negative effects of WMSDs in North Showa Zone

2. General objective of the study

The main purpose of this study is to assessing the existence of Work-Related Musculoskeletal Disorders and their influences on office workers in some selected woredas of North showa Zone.

Specific objectives of the study

The specific objectives of the study are to assess the presence or absence of work related musculoskeletal disorders, to prevent further effects of the disorders, to identify the most commonly occurred work related musculoskeletal disorders, to investigate the major causes of work related musculoskeletal disorders, and to identify the negative impacts of work related musculoskeletal disorders in the employees' bodies.

To this end, the study tries to answer the following basic research questions.

1. Are there work related musculoskeletal disorders in woredas of north showa zone?

1. If there what measures should have to take to prevent further effects of the disorders.
2. What are the most commonly occurred work related musculoskeletal disorders.
3. What are the major causes of work related musculoskeletal disorders?

4. What are the negative impacts of work related musculoskeletal disorders in the employees' bodies?

This study would be designed in the direction to investigate the existence and their influences of Work-Related Musculoskeletal Disorders on office workers (secretarial) and administrators in some selected woredas of North showa Zone. The researchers of this study hopes that the findings of the study would contribute to: Provide knowledge and information for the readers about Work-Related Musculoskeletal Disorders that resulted frequently on office workers, Initiate other researchers to conduct further and detailed study on the existence of work related musculoskeletal disorders and their influences on office workers in some selected woredas of North Showa Zone.

3. Materials and Methodology

This research was conducted in North Showa Zone (D/berhan town, Chacha, Enewary, Debresena, Atayetown, Shewarobittown, Keyitworda and Merhabete) and DebreBerhan University was selected as a place where to conduct this research due to its convenience in relation to time, money and work place for the researchers.

Descriptive survey study design would be carried out to investigate work related Musculoskeletal Disorders which lead to development of Musculoskeletal Disorders among office workers in some selected woredas of North Showa Zone. This design would be selected because it is simple, time saving, less expensive, and useful for descriptive and evaluative purposes in addition to assess the cause and effect at the same point of time (Neuman 2000:125). This design also gives some insights into the possible association among variables (Leedy, P.D. 1991).

Sampling is a process of systematically selecting cases or respondents for inclusion in a research study (Neuman 2000:201). In this case, 282 respondents have been randomly selected for the questionnaire, and 61 key informants for the interviews were selected purposively as these are the methods employed in this study.

In North Sowa Zone there are 24woredas and 3towns. Therefore, by using random sampling method from the total of 24woredas and 3towns' only eight woredas and town were selected, there was a total of 816 administrators and secretarial in the eight woredas of North Showa Zone and Deber Berhan University. From this eight woredas and Debre Berhan University we have a total of 407 administrators 280 were Male and 129 were Female and out of 407 secretarial 31 were Male and 376 were Female.

Out of 278 male administrators 117(42%), Out of 129 Female administrators 54(42%) and Out of 31 male secretarial 14(42%), Out of 376 female secretarial 158(42%) were taken as a participants of the study.

Out of the total population (816) among this we were taken 343(42%) office secretarial and administrators. The woredas were selected randomly and also the office secretarial and administrators would be selected by using purposive sampling techniques. By using simple

random selection method out of 343 office secretarial and administrators, the researchers would select 282 to fill questioner and 61 to participate in interview both in, Debre Birhan town, Chacha woreda Enuary woreda, Merehabete woreda, Tarmaber woreda, Ataye town, Showa Robit town, Keyit woreda and Debere Berhan University. Accordingly 40 to fill questionnaire and 7 for interview were taken from DebreBirhan town, from Chacha 18to fill questionnaire and 4 for interview, whereas from Enuwary 40to fill questionnaire and 10 for interview, from Merahebete40 to fill questionnaire and 10 for interview, from Tarmaber 30to fill questionnaire and 5 for interview, from Ataye 18 to fill questionnaire and 5 for interview, from Shewarobit20to fill questionnaire and 5 for interview, from Keyit woreda 30to fill questionnaire and 5 for interview and finally from Debere Berehan University 46to fill questionnaire and 10 for interview were taken purposively.

In order to select woredas and sample from the target population, the researchers adapted simple random and purposive sampling strategies. Simple random sampling method was employed as of selecting woredas while purposive sampling method was employed for selecting administrator and secretaries

In this study, both qualitative and quantitative analytical procedures were employed. Hence, Frequency Counts, Percentage and descriptive statements were used to analyses items of the questionnaire.

The data collected through structured questionnaires were presented in tables and analyzed by one of statically acceptable tools (percentages) and descriptive statements.

In addition, qualitative data were analyzed by summarizing responses of the open-ended items in the questionnaire and the interview. Finally, the data were analyzed and discussed to reach certain finding which in turn was used to give conclusion and possible recommendations. In addition to this documents were used to triangulate the responses.

4. Results and Discussion

Table 1. About suffering from upper body pain

Items	Category	Frequency	Percent
3. Is there any pain on your upper body?	yes	257	74.92%
	No	86	25.07%
	Total	343	100%
4. Among the following body parts from which part you feel pain or discomfort while you working in your office?	on neck	156	45.48%
	shoulder	56	16.32%
	wrist/forearm	59	17.20%
	upper back	61	17.78%
	lower back	11	3.20%
	Total	343	100%
5.In the last year, have you had pain or discomfort at upper part of your body caused by your job that lasted 2 days and more	Yes	210	(61.22%)
	No	133	(38.78%)
Total		343	100%

According to the data analyzed above, 257(74.92%) of respondents, answered that they are suffering a pain on their upper body and 86(25.07%) of respondents, answered that they are not suffered by a pain on their upper body. This implies that most of the respondents are suffering a pain on their upper body.

According to the data analyzed above, 156(45.48%) of respondents, answered that they are suffering a pain on their neck, while 56(16.32%) of respondents, answered that they are suffering a pain on their shoulder, about 59(17.20%) of respondents, answered that they are suffering a pain on their wrist/forearm, about 61(17.78%) of respondents, answered that they are suffering a pain on their upper back, and 11(3.20%) of respondents, answered that they are suffering a pain on their lower back. This shows that most of the respondents are suffering a pain on their upper body parts, so this is one of the reasons that limit the productivity of the workers.

Table 2. About the severity of neck pain on office workers

Item no. 1	**Alternative**	**Number of respondent**	**Percentage (%)**
6.While working is there a pain or discomfort on the neck	Less	**77**	22.44
	Some	195	56.85
	Worse	71	20.69
	Total	**343**	**100%**
1. After your shift, is the pain or discomfort on the neck	Less	**96**	27.98%
	Some	190	55.39%
	Worse	69	20.11%
	Total	**343**	**100%**
2. How many days you off from your work that caused by neck pain?	1-6 days	59	17.20%
	1 week-6menths	13	3.79%
	7menth-1year	9	2.62%
	1year & above	3	0.87%
	Non off	259	75.51%
	Total	**343**	**100%**
3. To how much degree does your pain or discomfort interfere with your work on the neck?	No interference	126	36.73%
	some interference	171	49.85%
	Had to take time off work due to pain	46	13.41%
	Total	**343**	**100%**
4. To how much degree does your pain or discomfort interfere with your life outside of work that caused by the neck pain?	No interference	136	39.65%
	some interference	207	60.35%
	Total	**343**	**100%**

As indicated in the above table, 210(61.22%) of the participants of the research replied that they are suffering a pain on their upper body in the last year, this pain or discomfort at their upper body caused by their job and the pain lasted two days and more, while 133(38.78%) of the participants of the research replied that they are not suffering by a pain on their upper body in the last year. This implies that most of the research participants are suffering by chronic upper body pains which affect their work.

Regarding pain on neck while working around 77 (22.44%) respondents answered that they have less pain or discomfort on the neck while they are working at office, about 195 (56.85%) of the respondents answered some and the rest, 71 (20.69%) of the respondents replied worse.

Thus, this indicates that majority of administrators and office secretaries are suffering by neck pain while working in the office.

Regarding, pain or discomfort on the neck after they shift from work around 96 (27.98%)respondents replied less, about 190 (55.39%)respondents replied some and about 69 (20.11%) of the respondents replied worse. This implies that more than half of the respondents were challenged by neck pain or discomfort after they shift from their regular work.

Regarding days they off from their work that caused by neck pain majority 259 (75.51%) of respondents replied that the pain dose not caused them off from work, while around59 (17.20%) respondents replied1-6 days, about 13 (3.79%) respondents replied1 week- 6months, about 9 (2.62%) respondents replied that 7month-1year, about 3 (0.87%) respondents replied that 1year & above they off from work by the pain in their neck.

Regarding the degree of neck pain or discomfort interfere their work the majority 171(49.85%) of participants answered that the neck pain or discomfort they faced has some interference on their work, 126(36.73%) of participants answered that no interference on their work, and around 46(13.41%) of participants answered that the neck pain or discomfort they faced force them to take time off work due to pain. Thus this indicates that the pain or discomfort that caused by neck pain disturbs workers on their work.

Regarding the degree of neck pain or discomfort interfere with their life outside of work the majority 207(60.35%) of participants answered that the neck pain or discomfort they faced has some interference on their life out of work, and 136(39.65%) of participants answered that no interference on their life out of work.

Regarding pain on lower back while working around 135 (39.35%) respondents answered that they have less pain or discomfort on the lower back while they are working at office, about 142(41.39%) of the respondents answered some pain or discomfort on the lower back while they are working at office and the rest, 66 (19.24%) of the respondents replied worse. Thus, this indicates that majority of administrators and office secretaries are suffering by lower back pain while working in the office.

Regarding, pain or discomfort on the lower back after they shift from work around 158(46.06%)respondents replied less, about 148 (43.14%)respondents replied some pain or discomfort on the lower back after they shift from work and about 37 (10.78%) of the respondents replied worse. This implies office workers were challenged by lower back pain or discomfort after they shift from their regular work.

Table 3. about the pain or discomforts of lower back on office worker:

Item no. 1	**Alternative**	**Number of respondent**	**Percentage (%)**
26.While working is the pain or discomfort on the lower back	Less	135	39.35%
	Some	142	41.39%
	Worse	66	19.24%
	Total	343	100%
Item no. 1	**Alternative**	**NO of respondent**	**Percent**
27.After your shift, is the pain or discomfort on the lower back	Less	158	46.06%
	Some	148	43.14%
	Worse	37	10.78%
	Total	343	100%
28. How many days off at your work caused by lower back pain?	1-6 days	54	15.74%
	1 week-6ments	35	10.20%
	7menth-one year	31	9.03%
	More than one year	10	2.91%
	Non off	213	62.09%
	Total	343	100%
29. To how much degree does your pain or discomfort interfere with your work on the lower back?	No interference	180	52.47%
	some interference	122	35.56%
	Had to take time off work due to pain	41	11.95%
	Total	343	100%
30. To how much degree does your pain or discomfort interfere with your life outside of work on the lower back?	No interference	188	54.81%
	some interference	155	45.18%
	Total	343	100%

Regarding days they off from their work that caused by lower back pain majority 213 (62.09%) of respondents replied that the pain dose not caused them off from work, about 54(15.74%) of respondents replied that the pain caused them 1-6 days off from work, while around 31(8.03%) respondents replied 7month-1year, about 35 (10.20%) of respondents replied 1 week- 6months, about 10 (2.91%) of respondents replied that 1year & above they off from work by the pain in their lower back

This implies that lower back pain is a problem on North Showa zone office workers.

Regarding the degree of lower back pain or discomfort interfere their work the majority 180(52.47%) of participants answered that the lower back pain or discomfort they faced has less interference on their work, 122(35.56%) of participants answered that the pain or discomfort has some interference on their work, and around 41(11.95%) of participants answered that the lower

back pain or discomfort they faced force them to take time off work due to pain.

Thus this indicates that the pain or discomfort that caused by lower back pain disturbs workers on their work.

Regarding the degree of lower back pain or discomfort interfere with their life outside of work the majority 188(54.81%) of participants answered that less interference on their life out of work while 116(33.81%) of participants answered that the lower back pain or discomfort they faced has some interference on their life out of work, the rest 40(11.66%) of participants answered that the lower back pain or discomfort they faced was worse.

Thus this indicates that the pain or discomfort that caused by lower back pain disturbs their life outside of their work.

Based on the participants of this research, it is so easy to understand that there was consistency of views on the issues that rose by the researchers. At this point in time, it is also vital to repeat that significant numbers of respondents were argumentative about the problems of work related musculoskeletal disorders.

One of the key potential factors which have got relatively a significance number of respondents' consideration was, "poor knowledge and practice of the problem". "I am working as an office secretarial for many years but I have no idea about what you have saying (i.e. about work related musculoskeletal disorders)

From broader perspective, in this respect World Health Organization, 2003 has defined a work-related disorder as one that results from a number of factors, and where the work environment and the performance of the work contribute significantly, but in varying magnitude, to the causation of the disease.1, 2 The term musculoskeletal disorder denotes health problems of the loco-motor apparatus, i.e. muscles, tendons, the skeleton, cartilage, the vascular system, ligaments and nerves. Work-related musculoskeletal disorders (MSDs) include all musculoskeletal disorders that are induced or aggravated by work and the circumstances of its performance.

Above all, it is advisable that organization should take into account the health needs of their workers so they should facilitate means that help their workers to have knowledge and practice on work related musculoskeletal disorders.

And the other key potential factors which have got relatively a significance number of respondents' consideration was, 'lack of scientific method of chair and computer set up on work place in many offices of North Show Zone;' Related to this, World Health Organization, (1985) stated that significant positive relationship between sitting posture and Upper Body parts pain, especially workers who sat for more than 95% of the working time. The risk of Upper Body parts pain was twice as high as for workers who hardly ever worked in a sitting position.

And also Ariens et al. (1999), suggesting a clear relation between sitting posture and Upper Body parts sitting for more than 5 hours a day and self-reported Upper Body parts. A reasonable

mechanism for the strong relation between prolonged sitting and Upper Body parts which was found in his study is the static aspect of the posture. Working in a sitting position will lead to a continuous static load on the neck muscles and other part of body especially if the design of the workplace is not suitable for the worker. Static loading of the neck muscles will induce biomechanical strain for example; an increased muscle tone which may in the long term lead to the development of disorder on Upper Body parts.

According to Ariens et al.,(2000). Work related musculoskeletal disorders of the upper extremities, in particular lower back, upper back, shoulders, neck, and hands or wrists, were most prevalent among all office workers particularly managers and office secretariats because they have been seated for long period of time and their work are more related with computers i.e. they use key board and mouse continuously. Hence, the high prevalence of upper extremity work related musculoskeletal disorders is not surprising.

In the same manner, the results of the study obviously correspond to that there is high relationship between the responses of managers and office secretarial on the issue that is work related musculoskeletal disorders.

5. Conclusion

work-related' musculoskeletal diseases (WMSDs) have heavy economic costs to companies and to healthcare systems. The costs are due to loss of productivity, training of new workers and compensation costs. These costs are felt globally, particularly as organizations begin to develop international partnerships for manufacturing and service roles. Logically the employees are one of the stake holders that help the country to achieve its goals in every sustainable developmental sector.

The foremost trials associate with the work-related' musculoskeletal diseases (WMSDs) are lack of sufficient knowledge, lack of regular exercise, hang around long period of time on computer, remaining long period of time on the same work, suffering a pain on their upper body. In this admiration, contributors specified that office workers (administrators and secretaries) should do regular exercise to be healthy and productive.

6. Recommendations

The researchers proposed the following recommendations in light of the summary and conclusions made.

- ✓ North Showa Zone administrators should understand the means and solutions of work related musculoskeletal disorders.
- ✓ Employer's responsibilities; Employers have both a moral and legal obligation to ensure a safe and healthy work environment. It also makes good business sense. Injured workers lead to a drop in production and a subsequent loss of profits. Good work practices effectively pay for themselves as production remains free from disruption, insurance costs are minimized, employee morale is good, and customers get what they need when they need it.

- ✓ MSDs prevention needs to be a key part of a workplace health and safety program. MSDs risk factors should be handled like any other workplace hazard. Employers should identify and assess job-related MSDs risk factors (do a job/task hazard analysis) implement controls to reduce workers' exposure to MSDs risk factors

    - inform and train workers about MSDs risk factors in their job and in the workplace
    - Encourage workers to participate in the health and safety program by reporting MSDs symptoms or concerns early follow up to make sure preventive measures are working.
    - MSDs prevention can be simple and inexpensive. Often making straight forward and basic changes can reduce MSDs risks significantly.

- ✓ Preventions of WMSDs; Threats are best eliminated at the source; this is a fundamental principle of occupational health and safety. In the case of WMSDs, the prime source of threat is the repetitiveness of work. Other components of work such as the applied force, fixed body positions, and the pace of work are also contributing factors. Therefore the main effort to protect workers from WMSDs should focus on avoiding repetitive patterns of work through job design which may include systematization, job rotation, and job expansion. Where elimination of the repetitive patterns of work is not possible or practical, prevention strategies involving workplace layout, tool and equipment design, and work practices should be considered.
- ✓ Treatments of WMSDs; the treatment of WMSDs involves several approaches including Application of heat or cold and Exercise.

    - ***Application of Heat or Cold***; Applying heat or cold seems to relieve pain and may accelerate the repair process. Cold reduces pain and swelling and is recommended for injuries and inflammations (tissues that are swollen, red, hot and inflamed). The use of ice it is not recommended in case of muscle pain (spasm) because cold temperature will contract the muscle even more. Application of ice on painful muscle is recommended only immediately after an injury occurred, and only for few days. Heat is recommended for muscle pain relief. Heat increases the flow of blood which facilitates the elimination of lactic acid build up. It is not recommended for injuries with significant inflammation and swelling.
    - ***Exercise;*** Stretching is beneficial because it promotes circulation and reduces muscle tension. However, people suffering from WMSDs should consult a physical therapist before exercising. Stretching or exercise programs can aggravate the existing condition if not properly designed.

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