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Musculoskeletal injuries in office workers
Lesiones osteomusculares en trabajadores de oficina

Raúl González-Salas
ua.raulgonzalez@uniandes.edu.ec
Universidad Regional Autónoma de Los Andes. UNIANDES, Ambato – Ecuador
https://orcid.org/0000-0001-8418-2849

ABSTRACT

The aim of this study was to determine the main musculoskeletal complaints of office workers. A quantitative, descriptive approach with a non-experimental design was used. The population consisted of 37 workers. The prevalence of musculoskeletal discomfort was analyzed according to different anatomical segments, resulting in 77% referred to the neck, followed by discomfort in the right shoulder with 48.31%, followed by lumbar discomfort with 35.48%, being considerable to generate ergonomic actions with the aim of preserving the health of workers. It was evidenced that 83.78% of the workers present some musculoskeletal symptoms. Seventy-seven percent reported cervical discomfort, followed by discomfort in the right shoulder 48.3% and discomfort in the dorsal or lumbar spine 35.48%.

Descriptors: systems of medicine; sensory systems; ergonomics. (Source: UNESCO Thesaurus).

RESUMEN.

El presente trabajo tiene como objetivo determinar las principales molestias osteomusculares que presentan los trabajadores de una oficina. Se utilizó un enfoque cuantitativo, de tipo descriptivo con diseño no experimental. La población estuvo conformada por 37 trabajadores. Se analizó la prevalencia de molestias osteomusculares de acuerdo con diferentes segmentos anatómicos teniendo como resultado 77% referida en el cuello, seguida de las molestias en hombro derecho con el 48.31%, seguida de molestias lumbares con el 35.48% siendo considerable generar acciones ergonómicas con la finalidad de preservar la salud de los trabajadores. Se evidenció que el 83.78% de los trabajadores presentan algún síntoma osteomuscular. El 77% refirió molestia cervical, seguida de molestia en hombro derecho 48.3% y molestia en columna dorsal o lumbar 35.48%

Descriptores: sistema médico; sistema sensorial; ergonomía. (Fuente: Tesauro UNESCO).

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INTRODUCTION

Musculoskeletal disorders are affections of structures such as muscles, tendons, joints, ligaments, nerves, cartilage, bones, vascular system, which are produced by activities in the work environment (Tišlar, *et al*. 2022); therefore, musculoskeletal injuries appear when exposure to mechanical stress that exceed the load capacity of the structures of the locomotor system. These injuries are classified as acute and chronic. Acute injuries are the result of brief and intense effort causing functional and structural failure of anatomical segments such as muscle tears or fractures. Chronic injuries are long-lasting and are caused by permanent efforts, producing pain and dysfunction that increases over time, such as ligament tears or muscle spasm (Balderas-López, *et al*. 2019).

In this sense; musculoskeletal disorders are related to work incapacity, within which rotator cuff tendinitis, bursitis, carpal tunnel syndrome, Quervain's tenosynovitis, lateral and medial epicondylitis, nonspecific low back pain, among others, are more prevalent (Sánchez-Medina, 2018). These injuries are sometimes difficult to diagnose because in most cases the only manifestation is pain, which is a subjective sensation, so it is necessary to analyze the working conditions to which the worker is exposed.

Therefore; repetitive movements and forced postures are among the most important risk factors for developing musculoskeletal injuries in different anatomical regions of the human body, which causes pain, discomfort and in many cases can generate musculoskeletal pathology which can lead to work incapacity and repercussions in the productivity of the company (Namwongsa, et al. 2018). In consideration, Repetitive movements and forced postures are among the most important risk factors for developing musculoskeletal injuries in different anatomical regions of the human body, which causes pain, discomfort and in many cases can generate musculoskeletal pathology which can lead to work incapacity and repercussions in the productivity of the company (Hoe, *et al.* 2018), (Arman, 2020), (Depreli, & Angın, 2018).

The present work aims to determine the main musculoskeletal complaints presented by workers in an office.

METHOD

This study used a quantitative, descriptive approach with a non-experimental design. The population consisted of 37 workers of the Credit and Savings Cooperative "Credi YA", head office located in the city of Ambato, Ecuador. Being a finite population of less than 100 people, no sample calculation was made, therefore, the total universe planned for the study was used.

The Nordic Kuorinka questionnaire, first published in 1987, was used as an instrument to detect initial musculoskeletal symptoms, and information was collected on pain, fatigue, and discomfort in different anatomical areas. The questionnaire consists of multiple-choice questions about musculoskeletal symptoms that the worker frequently presents in the workplace (Leirós-Rodríguez, *et al*. 2020). The strength of this instrument is that it can be used to study musculoskeletal complaints related to dynamic, static work and forced postures (Martínez, & Alvarado-Muñoz, 2017), (González-Muñoz, 2021), (Castro-García, *et al*. 2021).

For the analysis of results, the distribution of frequencies and percentages of positive cases of musculoskeletal complaints related to the different variables was used.

RESULTS

The 51.35% corresponds to the female gender, while 46.64% corresponds to the male gender. The age group 51.35% were between 18 and 30 years of age. 59.45% had an employment relationship of more than 12 months at the time of the present study.

Of the total number of respondents, 31 participants (83.78%) reported discomfort or pain in some body segment, while 16.21% reported no discomfort at all.

Of the 31 participants who presented pain, 77% reported cervical discomfort, followed by discomfort in the right shoulder 48.3% and discomfort in the dorsal or lumbar spine 35.48%.

The duration of the pain was observed that 41.93% presented pain in an interval of 1 to 24 hours, followed by 35.48% who presented discomfort with a duration of less than 1 hour, while 16.12% maintained the discomfort from 1 to 7 days.

In reference to pain treatment, only 22.58% said they had received some type of treatment or medical attention, while 77.41% had not received treatment.

The vast majority 80.64% stated that the discomfort was related to the design of the workstation, while 19.35% stated that the discomfort was caused by extra-occupational activities.

Regarding the level of knowledge of preventive measures, it was found that 70.27% were unaware of these measures, while 29.72% had some knowledge of prevention of musculoskeletal injuries.

Table 1. Presence of musculoskeletal complaints in relation to the variables.

Tipo de variable	Presenta dolor	SI	NO	TOTAL	Valor de P, X
V. EDAD	18-30 años	16	3	19	**P: 0.59 X: 1.1**
	31-40 años	11	3	14	
	>40 años	4	0	4	
	TOTAL	**31**	**6**	**37**	
V. GENERO	Femenino	18	1	19	**P: 0.06 X: 3.4**
	Masculino	13	5	18	
	TOTAL	**31**	**6**	**37**	
V.TIEMPO DE TRABAJO	2-6 meses	8	1	9	**P: 0.89 X: 0.2**
	7-12 meses	5	1	6	
	>12 meses	18	4	22	
	TOTAL	**31**	**6**	**37**	
V. AREA LABORAL	A. Administrativa	5	0	5	**P: 0.23 X: 4.3**
	A. Finanzas y Contabilidad	10	1	11	
	A. Marketing y Negociaciones	12	5	17	
	A. Seguridad y Mantenimiento	4	0	4	
	TOTAL	**31**	**6**	**37**	
V. CONOCIMIENTO	Si conoce	7	4	**11**	**P: 0.03 X: 4.7**
	No conoce	24	2	**26**	
	TOTAL	31	6	**37**	

Source: Own elaboration.

Table 1 presents a statistical analysis by calculating the p-value and chi-square in which it was determined that the variables: age, gender, work time and work area are not statistically significant, suggesting that they are not related to the appearance of musculoskeletal symptoms. While the variable knowledge of preventive measures rejects the null hypothesis, i.e. that it is directly related to the appearance of musculoskeletal symptoms.

DISCUSSION

In the current research it was evidenced that 83.78% of the workers present some musculoskeletal symptom, this leads to think about the study of (Leirós-Rodríguez, et al. 2020), where a reduction in the prevalence of musculoskeletal pain was identified ($p < 0.001$) in the sample of men and women, an increase (12.5%) in the frequency of performing moderate to frequent physical activity and the preference for strength training (15.1%), especially among women. All this may be taken into account by health institutions when implementing measures to promote physical activity, both in adequate amounts and types, to improve the quality of life of students; being considerable to apply in office workers, a physical activity program as part of the prevention of musculoskeletal discomfort.

In contrast, the sample of the current work, presents in 77% of its participants pain at the cervical level, this agrees with the study of (Seo, et al. 2022), who state that neck pain is associated with computer work, poor posture, imbalance of the neck muscles and fatigue, particularly in office workers. This involves the need to generate ergonomic actions in order to preserve the health of workers.

In continuation of the above, (Yaghoubitajani, et al. 2022), evaluated the effects of supervised online versus on-site corrective exercises on neck and shoulder pain (NSP), sick leave, posture, workability and muscle activity among office workers with upper cross syndrome (UCS), concluding that supervised online corrective exercise appears to improve a variety of parameters related to work performance. These findings are very applicable in light of the current pandemic of COVID; many workers have to work from home; this involves the possibility of proposing this strategy as an alternative for the prevention of musculoskeletal discomfort, especially when the current results show that 70.27% of workers surveyed do not have knowledge of preventive measures for musculoskeletal injuries, which was directly related to the occurrence of musculoskeletal symptoms.

CONCLUSION

The prevalence of musculoskeletal discomfort was analyzed according to different anatomical segments, resulting in 77% referred to the neck, followed by discomfort in the right shoulder with 48.31%, followed by lumbar discomfort with 35.48%, being considerable to generate ergonomic actions with the purpose of preserving the health of the workers. It was evidenced that 83.78% of the workers present some musculoskeletal symptoms. Seventy-seven percent reported cervical discomfort, followed by discomfort in the right shoulder 48.3% and discomfort in the dorsal or lumbar spine 35.48%.

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CONFLICT OF INTEREST

There is no conflict of interest with persons or institutions related to the research.

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