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RELATION BETWEEN LOW BACK PAIN AND PHYSICAL ACTIVITY LEVEL IN EMPLOYEES OF A PRIVATE UNIVERSITY CENTER FROM A CITY OF BAHIA

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ABSTRACT

Low back pain is real problem. For many institution employees actually and there is a possibility of direct association with the sedentary lifestyle. Therefore, the physical activity practice has been fundamental to prevent the low back pain in this public. The present study aimed to identify the relation between physical activity level and low back pain in employees of a private university center from a city of Bahia. It was realized a transversal study with probabilistic sampling. The sample was composed by employees from both sex that worked in the institution more than 6 months. It was applied validated questionnaires to evaluate the variables: McGill Questionnaire for low back pain and International Physical Activity Questionnaire (IPAQ) short version for physical activity level. The data was tabulated in Excel 2016 program and analyzed in Epi Info 7.2. The study collected data from 102 employees that showed a prevalence of low back pain of 53,92% being higher in the sedentary subjects (71,43%). The low back pain is multifactorial, and the physical activity helps to prevent but not discard the possibility of occurrence.

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INTRODUCTION

In contemporary times, with the new technological advent, the population faces by behavioral changes that directly interferes in the complete physical well-being of subjects (Who, 2018). Sedentary lifestyle appears as one of modern life pillars, extremely attached to comfort offered by this technological apparatus that has as consequences, besides of higher chronic diseases risk, musculoskeletal disorders, mainly low back pain (Parry, 2017). Besides sedentary lifestyle, the work in big companies can appear as risk factor to low back pain when there is no preoccupation with the ergometer well-being of employees (Curran *et al*, 2016). Thereby, there are necessary strategies to avoid the commitment of occupational health. The physical activity, in its different modalities, since that promotes an energetic spent superior to rest levels, has proven showed a improve in fitness being able to balance the monotonous practice of work environment with the body movement. Thus, physical activity can help in prevention of occupational diseases emergence (Andersen *et al*, 2016). The low back pain can be considered multifactorial. The bad posture, repetitive activities, weight overload over lumbar axis, adequate rest time lack, and fast movements appear as the principal etiology (Buchbinder *et al*, 2018). Studies show that low back pain is considered the principal cause of inability in subjects under 45 years and is the second largest cause of doctor´s appointments and work absences (Petit; Roquelaure 2015). Evidences show that prolonged time or session during the leisure or work journey can lead to musculoskeletal pain as low back pain, cervical pain, shoulders and hands pain. Although, more studies are necessary to complete these affirmations (De Rezende *et al*, 2014). This way, to know the relation between physical activity and the prevalence of low back pain can help in the awareness of change of habits, refusal to sedentary lifestyle and to prevent the occurrence of low back pain. Thus, the objective of the present study was identifying the relation between physical activity level and prevalence of low back pain in employees of a university center of a south-west city of Bahia.

MATERIAL AND METHODS

It was realized a transversal quantitative study with probabilistic sampling in the period of November to December of 2019. The research included the employees of a private

University Center of the city of Vitoria da Conquista, Bahia, Brazil because this institution has gym and programs of stimulus to physical activity practice and campaigns against sedentary lifestyle. It was requested a list with the number of employees to the institution, after that, the sample calculation was realized. Obtained this number, the employees were selected by random draw. It was included the employees from both sex that worked in the institution at least 6 months and excluded those with cognitive inability, rheumatic disease and neurologic low back pain. The data collect was realized through questionnaire by interview during the employees' work journey in morning, evening and nocturnal. The participants answered the McGill´s pain Questionnaire to Portuguese version adapted and validated by Pimenta and Teixeira (1996). This questionnaire was developed by Melzack (1975) to evaluate pain characteristics to treated them statistically permitting the communication between the sensorial, affective and evaluative qualities of pain. It contains a table with words that describe the pain of the subject who should choose only one word of each group. The Questionnaire International Physical Activity (IPAQ) short version is a validated instrument created by the World Health Organization in 1998 to measure the physical activity level of population validated in Portuguese by Matsudo *et al* (2001). The classification was active, insufficiently active and sedentary according the minutes of physical activity level. The insufficiently active involved the categories insufficiently active A and B. The data were tabulated in Excel 2016 and analyzed in Epi Info 7.2 to obtaining frequencies, mean and pattern standard. All the interviewed signed the informed consent form according the Resolution 466/12 and was approved by the Ethics Committee with the protocol 3.532.590.

77,1% of male and 61,2% of female were considered active showing that man used to be more active than woman. This data disagree with the study realized by Carvalho *et al* (2016) in the Federal University of Rio Grande do Norte, Brazil, that showed a high number of sedentary in men (66,7%) and women (33,3%) while in our study, this rate was 5,71% in male and 7,46% in female. The data can be better visualized in Table 1. About the prevalence of low back pain, 53,9% of sample referred pain and, from these, 48,6% were male and 56,7% female. The most signalized word was stabbing pain with 27,45%. This value was inferior to one found by Tavares et al (2019) of 81,7% in medicine students what can be explained by long period of time sitting due the big workload of their course. It is import to notice that was two young population with high rates of low back pain what can be explained by the lifestyle of the population and not only their work (Paranjape; Ingole 2018). The data can be better analyzed in Table 2. The data did not show significant difference between prevalence of low back pain in active (52,9%) and insufficiently active (51,8%). The significant difference appearsin relation to the sedentary that showed a prevalence of 71,4%. This suggest that low back pain can be associated with sedentary lifestyle and a insufficient physical activity practice is a risk factor to this commitment (Takatalo et al, 2017). More active life habits can be a protection to low back pain but not only once this disorder is multifactorial (Lima, 2019). Sgøaard; Sjøgaard, (2017) showed in their study that one hour of training focusing in the major group of muscle with adequate supervision can improve the pain related to the occupational functions demonstrating the effectivity of physical activity in decrease musculoskeletal pain. This study presented two limitations.

Table 1. Physical Activity Level

	GENERAL		MALE		FEMALE	
Physical Activity Level	N	%	N	%	N	%
Active	68	66,67%	27	77,14%	41	61,19%
Insufficiently active	27	26,47%	6	17,14%	21	31,34%
Sedentary	7	6,86%	2	5,71%	5	7,46%
Total	102	100%	35	100%	67	100%

Table 2. Relation between low back pain and physical activity level

02	Low Back Pain											
	YES						NO					
	GENERAL		MALE		FEMALE		GENERAL		MALE		FEMALE	
Physical Activity Level	N	%	N	%	N	%	N	%	N	%	N	%
Active	36	52,94%	15	55,56%	21	51,22%	32	47,06%	12	44,44%	20	48,78%
Insufficiently active	14	51,85%	1	16,67%	13	61,90%	12	48,15%	5	83,33%	8	38,10%
Sedentary	5	71,43%	1	50,00%	4	80,00%	2	28,57%	1	50,00%	1	20,00%
Total	55	53,92%	17	48,57%	38	56,72%	47	46,08%	18	51,43%	29	43,28%

RESULTS AND DISCUSSION

From the 201 selected participants, 102 (50, 74%) answered the questionnaires. There was 15 refusals and some employees were not found in the institution because were not their work shift or were out in external service. From the sample, 65,7% was female, the mean age was 35 (±10,47). About the physical activity level, 66,7% were classified active. According the WHO, more than a quarter of the adult population do not practice enough physical activity (Guthold *et al*, 2018). In our sample, one third (33,3%) did not have enough physical activity being considered insufficiently active and sedentary what confirm the world reality describe by Who. In our study, One is the small number of the sample what difficult the extrapolation of the data to all employees of the university center. Another is the use of self-report questionnaire what can lead to information bias.

Final Considerations

It was observed a high number of active employees and a high prevalence of low back being the sedentary individuals the more affected. This shows that sedentary lifestyle can cause harms to the well-being and physical activity can be a protector factor. Although only its practice not promote the beneficial effects once low back pain is multifactorial. Once

the number of active and insufficiently active subjects with low back pain was high, it is necessary future study to investigate the others factors that can be contributing to the emergence of this commitment.

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