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Mental health and physical activity in leisure time in teachers of a higher education institution

Saúde mental e atividade física no tempo de lazer em docentes de uma instituição de ensino superior

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ABSTRACT
Sedentary behavior, associated with little Physical Activity (PA) and inadequate habits, has contributed to the development of health problems in workers in developed and developing countries. Thus, the work environment seems to be an important space for the incorporation of appropriate health behaviors. This is a cross-sectional, exploratory and descriptive epidemiological study. The objective was to analyze the association of Leisure Time Physical Activity (LTPA) with Common Mental Disorders (CMD) and stress stages, considering issues related to work, sociodemographic, psychosocial characteristics and life habits of teachers from a public university in Bahia. The chi-square test was used to analyze the association between the study variables, CMD, stress and LPA considering the associations statistically significant when p-value ≤ 0.05. The results found regarding the prevalence of CMD was 20.4 for the population investigated. The presence of stress was positive for 24.0%. When categorized by phase, 3.6% were in the alert phase of stress; 24% in the resistance phase and 3.0% in exhaustion. The main results found in this study establish relationships with teaching work, stress, CMD, leisure and physical activities, demonstrating an association between these objects and the perception of health and quality of life of the teaching worker. Thus, it is important to develop policies to encourage the practice of PA within the workspaces of teachers, which can contribute to greater adherence to the practice and substantial improvement in the overall quality of life, in the physical and psychological domains and to reduce the symptoms of CMD and stress in this population.

Keywords: Physical activity, Teaching work, Common mental disorders, Stress, Quality of life.

1 INTRODUCTION

1.1 MENTAL HEALTH, WORK, COMMON MENTAL DISORDERS AND STRESS

Dejours (1994) states that talking about mental health is always difficult. Usually, suffering and illness are easily discussed. From this premise, to address a subject of such great relevance, one must understand the *locus* that mental health (or its absence) occupies in our day. Currently, the process of illness, present in the working classes, is seen as something that is collective and produced in connection with various stressors that generate suffering, such as violence, misery, unemployment, among others (FREITAS, 2012).

In addition to the vision of illness as a process engendered by the collective, we must consider the individual aspects involved in this process as Dejours (1999) points out. After all, the response of the individual worker to the impasses arising in the work process will determine whether this (the work) will be an element that brings motivation, pleasure to the individual or if it will be an element of suffering for the same.

Mental suffering and stress, generated as a result of inadequacies in the work process, can be caused by intrinsic factors such as failures in environmental organization, social factors and conditions to develop actions, work shift, remuneration, use of new technologies, amount of work, among other aspects (DOS SANTOS *et al*., 2023; FERREIRA *et al.,* 2022; JANSEN *et al*., 2011).

Mental disorders, in relation to the global burden of morbidity worldwide, produce a burden of 8.1%, while neuropsychiatric disorders range from 3.4% in countries south of the Sahara to 8.0% in China and regions of Latin America and the Caribbean (BRAZIL, 2014).

In Brazil, epidemiological surveys point to an estimate of 9% for Anxiety Disorders, 3% for Somatoform Disorders, 2.6% for Depressive Disorders (in the female population), 8% for Alcohol Dependence and Anxiety Disorders, with 4.3% (in the male population) (ARAUJO 2011; AZEVÊDO, 2017; ARAUJO; LOTUFO, 2014).

The term CMD refers to health states involving non-psychotic psychiatric symptoms, such as prominent depressive, anxiety and psychosomatic symptoms, which bring about functional impairment or disruption of people's normal functioning, although they do not meet the formal criteria for diagnoses of depression and/or anxiety according to the DSM-V and ICD-10 classifications (FERREIRA *et al*., 2022; MARAGNO *et al.*, 2006).

According to Santos (2002), CMD refers to the health situation of a population with individuals who do not meet the formal criteria for diagnoses of depression and/or anxiety according to the DSM-V (*Diagnostic and Statistical Manual of Mental Disorders - Fourth Edition*) and ICD-10 (*International Classification of Diseases - 10th Revision)* classifications, but who have relevant symptoms that bring functional impairment comparable to or even worse than well-established chronic conditions.

Regarding stress, Filgueiras and Hippert (1999) address in their study that Hans Selye defines it as a natural reaction of the organism that maintains human survival being a fundamental defense mechanism to face a strong emotion or stressful situations caused by the external and/or internal environment. Also, the authors emphasize that Selye classified stress into three phases, namely the alarm phase, the resistance phase and the exhaustion phase (AZEVÊDO, 2017;

FERREIRA *et al*., 2022; LIPP, 2000). In addition, Lipp (1984) in her studies identified another phase, the fourth, in which she called the quasi-exhaustion phase.

1.2 PHYSICAL ACTIVITY IN LEISURE TIME

To discuss the theme of physical activity in leisure time as a preventive factor of psychosomatic diseases related to work, it is necessary, previously, to discuss a broader theme, which is the Quality of Life of the Worker (QOL).

In the health field, interest in the concept of Quality of Life (QOL) stems in part from the new paradigms that have influenced health sector policies and practices in recent decades.

The determinants and conditioning factors of the health-disease process are multifactorial and complex. Thus, health and disease are understood as a continuous process, related to economic and sociocultural aspects; to the personal experience and lifestyles of working individuals (DOS SANTOS *et al*., 2023; FERREIRA *et al*., 2022; FREITAS, 2012).

In this context, leisure-time physical activities have acquired great importance due to the fact that work-health relations reveal clear conflicts and contradictions of interest. On the one hand, there is a search for an optimization of production relations at work (with the improvement of the physical conditions of the worker) and, on the other hand, the possibilities of social transformation, through the political struggle assumed by the work pole in current societies.

Thus, PA would have the function of collaborating in the two aspects pointed out above. That is, PA can collaborate to improve working relationships by improving the physical conditions of the worker and also stimulate the individual's awareness of the need to transform what is not satisfactory in the relationships established in their work environment (AZEVÊDO *et al*., 2021; DOS SANTOS *et al.,* 2022).

The benefits of PA practice for the health and quality of life of people of all ages are well documented in the scientific literature (AMARAL, 2017; FILHO; JESUS; ARAÚJO, 2014; LUAN *et al*., 2019).

In addition to the purely functional assessment of leisure-time PA, research indicates that PA plays a key role in maintaining workers' health (AZEVÊDO *et al*., 2021; DOS SANTOS *et al.,* 2022; PUCCI et *al*., 2012; RIBEIRO, 2019; SANTOS; ALMEIDA, 2020).

For Caplan (1987), the most important point for maintaining mental health and avoiding mental disorder is to make sure that activities in the family or other primary group are directed towards helping the person in personal or professional crisis to face their problem in some 'active' way, rather than avoiding it or limiting their activity to stress-relieving mechanisms.

Several studies seek to analyze the importance of leisure-time physical activities in protecting the mental health of workers (AZEVÊDO *et al*., 2021; FARAH, 2013; NAHAS *et al.,* 2010).

Jonsdottir *et al.* (2010) conclude from their research that regular physical activity can promote primary prevention in individual psychological health and also have a therapeutic action in clinical cases of depression and anxiety disorder.

Mammen and Faulkner (2013) state that PA contributes to the reduction of depression symptoms regardless of physical fitness gain. For them, the benefit is more associated with the frequency of practice than its duration.

Among the benefits cited by the authors are improvements in sleep and relationships. In addition, they cite five hypotheses that relate PA and mental health: increased body temperature; release of endorphins; action of monoamines; activities as distraction; self-efficacy.

2 OBJECTIVE

The objective of this study was to analyze the association of LPA practice with CMD and stress stages, considering issues related to work, sociodemographic, psychosocial characteristics and life habits of teachers from a public university in Bahia.

3 METHODS

This is a cross-sectional, exploratory and descriptive epidemiological study (MEDRONHO *et al*., 2009). The research site is a Higher Education Institution (HEI), located in the urban area of the municipality of Feira de Santana. The reference teaching population was composed of adults (>18 years), of both sexes, in professional practice (statutory).

For sample calculation, population prevalence of the main outcome under investigation is considered: stress and its stages and unknown CMD.

Thus, a prevalence of 50% was considered. Correction for finite population was also applied, with sampling error of five percentage points and 95% confidence. An additional 10% was added for losses and 10% for confounding variables.

The following instruments were applied:

1) Questionnaire on sociodemographic characteristics and social support;
2) International Physical Activity Questionnaire;
3) Inventory of Stress Symptoms for Adults (ISSL)
4) Quality of Life Research Instrument: WHOQOL- Bref

5) Non-Psychotic Psychiatric Symptoms - SRQ20

Data analysis was performed in the following steps: a) descriptive analysis: description of sociodemographic variables, working conditions, lifestyle habits, level of physical activity, stress and its different stages and common mental disorders and calculation of simple frequencies, with the aim of characterizing the study population; and, b) bivariate analysis: evaluation of possible measures of association between variables of interest (level of physical activity, stress, CMD and associated factors) using the chi-square test. For the evaluation of factors associated with the level of physical activity, stress and CMD, prevalence (P), prevalence ratio (PR) and their respective confidence intervals were calculated, taking as a statistically significant criterion, the 95% confidence interval, according to the chi-square test.

The study was assessed by the Ethics Committee of the State Health Department of Santa Catarina, in accordance with Resolution no. 466/12 of the National Health Council. It was approved under opinion number 1,437,801. CAAE number 44009814.2.0000.0115. In addition, the Informed Consent Form (ICF) was applied to the participants containing all information about the purpose of the research and emphasizing the feedback on the results obtained from it.

4 RESULTS AND DISCUSSION

4.1 SOCIODEMOGRAPHIC CHARACTERISTICS OF TEACHING STAFF

The assessment of working conditions allows for a broader understanding of the risks and evidence of the process of becoming ill due to working conditions. The health conditions of workers in general, and of teachers in particular, depend on the relationships, conditions and characteristics of work organization.

Of the total 170 teaching workers assessed, 54.1% were predominantly women. Among the participants, most were aged between 40 and 59 years, 34.3% were between 40 and 49 years old and 33.7% between 50 and 59 years old. Regarding race/skin color, 59.8% were black, 53.3% with brown skin and 6.5% black. Regarding marital status, 70% were married or in a stable union.

4.2 CHARACTERISTICS RELATED TO TEACHERS' WORKING CONDITIONS

Regarding income, 44.0% received between 5 and 10 minimum wages; 38.4% received between 10 and 15 minimum wages and 8% received between 15 and 20 minimum wages. Most of the teaching workers, 56.4%, worked between 30 and 40 hours a week; 42.7% started working

between 14 and 19 years old and 33.5% between 20 and 24 years old. Of the total number of workers, only 7.2% work or have worked night shifts or 24-hour shifts.

Regarding leisure sports activities, 26.8% said they had some kind of leisure sports activity at least once a week, 15.5% said they did it at least two to three times a week and 35.7% did not do any kind of leisure sports activities. Regarding volunteer work, 58.1% did not do any type, while 21.6% said they did it a few times a year. Regarding religious activities, 29% had no practice and 24.9% said they had some monthly practices; 13% said they had weekly practices.

Among the sociodemographic characteristics, CMD showed a statistically significant association ($p<0.05$) with marital status, race/skin color, age group, monthly income and complete years of study (Table 01). In this sense, the probability of CMD among widowed participants is 4.75 times higher, and 3.13 and 5.64 times higher among teachers with black or yellow skin, respectively. As for age, the probability is 3.0 times higher among those aged <30 years. In the group with income between 10 and 15 minimum wages, the probability is 3 times higher. As for years of study, the probabilities were 1.6 and 3.25 times higher for those aged up to 19 and >40 years, respectively (Table 01).

Regarding QOL, the GQOL score was 3.68. In the specific domains, a score of 1.71 was found for the physical domain, 2.17 for the psychological domain, 3.38 for social relations and 2.38 for the environmental domain (Table 1). In other words, the teachers considered their GQoL to be good, but the physical and psychological domains had lower scores.

Table 01 - Distribution of mean scores, correlation of each facet by domain of WHOQOL-Breef in teaching workers of a HEI, Feira de Santana, BA, 2017.

Domain/Face	Average score	Correlation	Mean domain score	p-value
General Quality of Life			3,68	<0,01
Perception of Quality of Life	3,75	0,875**		
Satisfaction with health	3,61	0,895**		
Physical Domain			1,71	-
Q3 (dependence on medication and/or treatments)	2,33	0,174*		
Q4 (pain and discomfort)	1,95	-0,24		
Q10 (energy and fatigue)	3,57	0,579**		
Q15 (mobility)	4,45	0,360**		
Q16 (sleep and rest)	3,36	0,695**		
Q17 (activities of daily living)	3,75	0,718**		
Q18 (working capacity)	3,79	0,717**		
Psychological Domain			2,17	<0,01
Q5 (positive feelings)	3,53	0,707**		
Q6 (spirituality)	4,36	0,699**		
Q7 (thinking, learning, memory and concentration)	3,80	0,633**		
Q11 (body image and appearance)	3,92	0,614**		

Q19 (self-esteem)	3,89	0,739**		
Q26 (negative feelings)	2,10	-0,204**		
Social Relations domain			3,33	<0,01
Q20 (personal relationships)	3,77	0,860**		
Q21 (sexual activity)	3,73	0,767**		
Q22 (social support)	3,71	0,839**		
Environment			2,38	
Q8 (physical safety and security)	3,70	0,607**		
Q9 (home environment)	3,46	0,501**		
Q12 (financial resources)	3,45	0,663**		
Q13 (opportunities to acquire new information and skills)	3,90	0,557**		
Q14 (recreation and leisure opportunities)	3,16	0,544**		
Q23 (physical environment, pollution, noise, traffic and climate)	3,89	0,625**		
Q24 (health and social care)	3,39	0,735**		
Q25 (transport)	3,72	0,633**		

* Correlation is significant for p-value <0.05 (moderate correlation).
** Correlation is significant for p-value <0.01 (strong correlation).

Of the teaching workers investigated, the presence of stress was found in 24.0% of them. Among the workers who presented stress, 87.5% were in the resistance phase and 12.5% in the exhaustion phase (Table 02).

Table 02 - Stress and different stages in teaching workers of a HEI, Feira de Santana, BA, 2017.

Variables	N	%
Stress		
Yes	40	24,0
No	127	76,0
Alert phase		
Yes	-	-
No	-	-
Resistance Phase		
Yes	35	87,5
No	5	12,5
Exhaustion phase		
Yes	5	12,5
No	35	87,5

Among the sociodemographic characteristics, there was a statistically significant association between stress and gender (p-value = 0.024) and completed years of study (p-value = 0.020).

According to PAHO/WHO (2013), the population of workers, in general, has a higher frequency of mental and behavioral disorders, with an estimated percentage of approximately 10% of the world's adult population.

The overall prevalence of CMD in the study population was 20.2%. While the WHO (2016) presents an average prevalence of around 24% for women, this study found 21.8% among women

and 18.9% for men. The prevalence rates in international studies indicate percentages between 27.0% and 18% in Chile and Great Britain, respectively (PINHO; ARAÚJO, 2012).

Regarding the prevalence of CMD, the percentage was 20.4 for the population investigated (Table 03).

Table 03 - Common Mental Disorder in teaching workers of a HEI, Feira de Santana, BA, 2017.

Variables	N	%
TMC		
Yes	33	20,4
No	129	79,6

A percentage of CMD in the population studied is within the world average.

According to Ferreira (2015), university professors are exposed to an increase in tension at work due to the fragmentation of their activity and the responsibilities required, without, in many situations, having the necessary conditions to respond adequately. This situation can represent stressful conditions, increasing the risk of mental disorders, such as stress and CMD (ASSUNÇÃO *et al*., 2022; AZEVÊDO *et al.,* 2021; RIBEIRO, 2019).

Regarding the level of physical activity of teachers, the IPAQ showed that 15% were sedentary; 14% were Irregularly Active B; 24.0% Irregularly Active A; 36.5% were active and 9.6% were considered very active (Table 04).

Table 04 - Classification of the level of physical activity (IPAQ) of teaching workers at a HEI, Feira de Santana, Bahia, 2017.

Variables	N	%
Level of physical activity		
Sedentary	26	15,6
Irregularly Active B	24	14,4
Irregularly Active A	40	24,0
Active	61	36,5
Very active	16	9,6

Lima and Lima-Filho (2009) addressed the health-disease process of the teaching worker. The objective of the authors' research was to verify the relationships between the teaching work process and the possible physical and mental illness of teachers at a federal university. To this end, an exploratory survey was conducted with 189 teachers. The results show that teachers present emotional exhaustion, considering the high manifestation of symptoms such as nervousness, stress, mental fatigue, forgetfulness, insomnia, among others.

The aforementioned authors draw attention to the high manifestation of complaints related to mental health. The most prevalent symptoms were: mental fatigue (53.9%), stress (52.4%),

anxiety (42.9%), forgetfulness (42.9%), frustration (37.8%), nervousness (31.1%), anguish (29.3%), insomnia (29.1%) and depression (16.8%).

A statistically significant association was observed between the level of physical activity and stress in teaching workers (p-value = 0.017). In addition to the association between the IPAQ and the stages of stress (p-value = 0.027) (Table 05).

Table 05 - Association between the classification of the level of physical activity (IPAQ) and stress in teaching workers of a HEI, Feira de Santana, BA, 2017.

Variables	Classification of physical activity level (IPAQ)									
	Sedentary		Irregularly Active B		Irregularly Active A		Active		Very Active	
	N	%	N	%	N	%	N	%	N	%
Stress										
Yes	15	57,7	20	83,3	28	70,0	51	85,0	13	81,2
No	11	42,3	4	16,7	12	30,0	9	15,0	3	18,8
p-value	**0,017***									
Stages of Stress										
No stress	15	57,7	20	83,3	28	22,0	51	40,2	13	10,2
Warning	-	-	-	-	-	-	-	-	-	-
Resistance	10	38,5	4	16,7	12	34,3	7	20,0	2	5,7
Exhaustion	1	3,8	-	-	-	-	2	50,0	1	25,0
p-value	**0,027***									

5 FINAL CONSIDERATIONS

The phenomenon of mental health/illness presents a complexity and multiplicity of factors that may be involved in the process of illness of working individuals and should be analyzed when the objective is to investigate how these numerous factors can influence their daily lives and their inter and intrapersonal relationships.

Currently, societies impose on individuals the denial of their feelings. Feelings of sadness, frustration and loss are inherent to the human condition, as are feelings of joy, pleasure and completeness. Therefore, it is necessary to understand that all feelings must be felt, known and expressed by people without this being considered pathological.

In general, the reduction of leisure, social and family life is directly related to the teaching occupation. The level of LPA of university professors tends to be reduced and irregular, which can lead to the emergence of symptoms related to CMD and stress. Thus, one should think of strategies that increase the adherence of teachers in PA programs that can happen within the HEIs themselves. This may be an alternative.

However, it should be understood that mental health issues are quite subtle. To achieve any goal that presupposes teacher buy-in, the action must be articulated in such a way that teachers realize the importance of such programs for their health.

In summary, it can be said that the perception of the general quality of life and well-being of teachers in this sense can be considered good, although it is clear that the physical and psychological dimensions are the ones that need special attention. On the other hand, it is necessary to think about strategies to achieve a successful adherence of teachers in programs to encourage the practice of AFTL.

Recognizing the limitations found in this study, and understanding that more studies related to the theme should be carried out with the population investigated, it is indicated that new studies be carried out in order to verify the existence of barriers and facilitators in other teaching segments; expand the investigation of the barriers perceived by teachers to increase the level of PA practice and evaluate the physical environment in which the investigated population is inserted, in order to suggest more comprehensive interventions as well as more specific ones, if necessary.

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