Rev Bras Cineantropom Hum

original article

DOI:dx.doi.org/10.1590/1980-0037.2020v22e59241

Level of physical activity and associated factors in a public university

Nível de atividade física no ensino público superior e fatores associados

Juliane Barroso Leal[1]
https://orcid.org/0000-0001-7255-5732
Rafael Ayres Montenegro[1]
https://orcid.org/0000-0002-9087-8970
José Roberto Andrade do Nascimento Junior[2,3]
https://orcid.org/0000-0003-3836-6967
Leidjane Pereira Siqueira[2,3]
https://orcid.org/0000-0003-4690-4825
Camila Maria Menezes Almeida[2,3]
https://orcid.org/0000-0002-0557-4738
José Fernando Vila Nova de Moraes[2,3]
https://orcid.org/0000-0002-7394-7700
Ferdinando Oliveira Carvalho[1,2,3]
https://orcid.org/0000-0003-0306-5910

Abstract – The aim of the present study was to investigate the level of physical activity and associated factors of the academic community of a Brazilian federal higher education institution. Overall, 483 students, 49 teachers and 153 administrative technicians of both genders participated in this stdy. Sociodemographic questionnaire, BMI evaluation and classification of the level of physical activity (IPAQ) were used. Statistical analysis was performed by the Pearson Chi-square test to observe possible associations between independent variables and LPA and Poisson regression analysis with 95% confidence intervals through the SPSS software version 22.0. Among the 61.8% of individuals classified as physically active, 48.90% belonged to the health area and 52.40% had Graduation / Specialization level. Of these, 45.7% showed normal BMI and 62.2% of them did not practice exercises before being admitted to the extension project. Teachers and administrative technicians were, respectively, 3.62 (95% CI = 1.11-11.82) and 2.15 (95% CI = 1.03-4.66) times more likely of having sedentary behavior when compared to the group of students. LPA was higher in undergraduate students, while teachers and technicians were more likely of being sedentary. The majority of participants had normal BMI and the largest portion of physically active individuals was composed of students of the health area. Thus, it is necessary to encourage interventions for the practice of physical activity within the academic community, as well as the implementation of internal policies to mobilize individuals to improve the worrying situation of sedentary behavior.

Key words: Higher education; Physical activity; Sedentary behavior.

Resumo – *O objetivo do presente estudo foi investigar a prevalência do nível de atividade física (NAF) no ensino superior e seus fatores associados da comunidade universitária de uma instituição federal brasileira. Participaram do estudo 483 discentes, 49 docentes e 153 técnicos administrativos de ambos os sexos participantes. Para avaliação dos fatores associados sexo, idade, vínculo com a universidade, área da atuação, nível de escolaridade, massa corporal e IMC foram aplicados: i) questionário sociodemográfico; ii) avaliação do IMC e ii) classificação do NAF por meio do instrumento IPAQ. A análise estatística foi feita pelo teste Qui-quadrado de Pearson para observar possíveis associações entre as variáveis independentes e o NAF. A análise de regressão de Poisson com intervalos de confiança de 95% foi feita por meio do programa SPSS versão 22.0. Dentre os 61,8% dos indivíduos classificados como ativos, 48,9% eram da área da saúde e 52,4% pertenciam à Graduação/Especialização. Destes, 45,7% apresentaram IMC na faixa da normalidade e 62,2% da amostra não praticavam exercícios antes do início da pesquisa. Docentes e técnicos administrativos apresentaram, respectivamente, 3,62 (IC95%= 1,11-11,82) e 2,15 (IC95%= 1,03-4,66) vezes mais chances de possuírem nível sedentário quando comparado ao grupo de discentes. O NAF foi mais elevado nos discentes de graduação. Os docentes e técnicos apresentaram maiores chances de ser sedentários. Desta forma, faz-se necessário o incentivo de intervenções para práticas de atividade física dentro da comunidade acadêmica, além da implementação de políticas internas que mobilizem os servidores em geral para melhoria do quadro preocupante de comportamento sedentário.*

Palavras-chave: *Atividade física; Ensino superior; Sedentarismo.*

1 Federal University of Vale do São Francisco. Graduate Program in Health and Biological Sciences. Petrolina, PE. Brazil.

2 Federal University of Vale do São Francisco. Graduate Program in Physical Education. Petrolina, PE. Brazil.

3 Federal University of Vale do São Francisco. Physical Education Collegiate. Petrolina, PE. Brazil.

Received: September 18, 2018
Accepted: March 14, 2020

How to cite this article
Leal JB, Montenegro RA, Nascimento Junior JRA, Siqueira LP, Almeida CMM, Moraes JFVN, Carvalho FO. Level of physical activity and associated factors in a public university. Rev Bras Cineantropom Desempenho Hum 2020, 22:e59241. DOI: http://dx.doi.org/10.1590/1980-0037.2020v22e59241

INTRODUCTION

Physical inactivity or sedentary behavior is the fourth major risk factor for death worldwide[1]. The World Health Organization (WHO) reports that approximately 3.2 million people die each year from physical inactivity. In addition, sedentary behavior is a predisposing factor for the development of several chronic non-communicable diseases[1,2]. Physical activity (PA) is one of the main examples of changes in lifestyle with positive effects for several diseases, improving muscle and cardiorespiratory conditioning, increasing bone and functional health[3]. In addition, current studies related to the practice of PA have highlighted the benefits for mental health, notably in relation to the improvement of antidepressant factors, reasoning and concentration[3-6].

The most recent data from the National Health Survey indicate that 46.0% of adults are considered insufficiently active (≤150 min / week of physical activity considering leisure time, work and commuting), the majority being women (51.5%). In addition, the elderly population (62.7%) and adults with incomplete elementary school (50.6%) also presented unsatisfactory levels of physical activity[2].

The university community, especially students and teachers, is a population susceptible to a great deal of exposure to stress factors, such as change of residence[7], increased responsibility[7], psychological pressure[6,7], longer time in classroom, higher concentration and longer time at the university[6], factors that contribute to the decrease in the levels of PA[6,7]. Interestingly, the general population believes that individuals linked to the health area have healthier lifestyles compared to those linked to other areas (ex: Exact and Agrarian areas and Humanities), since they have disciplines throughout their academic journey that encourage or highlight the importance of health education and lifestyle strategies aimed at health promotion[6,7]. Therefore, the level of physical activity (LPA) can be influenced by several factors, including demographic factors such as sex, age, social factors such as link to the university, area of activity, schooling, and anthropometric factors such as mass body weight and body mass index (BMI).

In order to improve the health of the academic community and to reduce stress levels, it is important to carry out diagnoses to evaluate LPA, because the university is marked by intense academic and professional activity, changes in social bonds and increase of emotional stress. Consequently, developing strategies to promote PA within the university environment is an intervention with great possibility of adherence.

Thus, the aim of this study was to investigate the level of physical activity among teachers, administrative technicians and students of extension projects in physical activity and its associated factors.

METHOD

Participants

All students, teachers and administrative technicians who practice body-

building were invited to participate in the "Academia Universitária" Extension Project of UNIVASF, Petrolina-PE, totaling 702 subjects. However, 17 individuals were excluded from the survey because they did not answer the questionnaire correctly. Thus, 685 subjects participated in the present study, of which 483 were students (approximately 10% of the total students regularly enrolled in undergraduate courses), 49 teachers (approximately 10% of the total effective teachers) and 153 administrative technicians (approximately 30% of total technicians) of both sexes (285 men and 400 women). Participants were from the health (biological sciences, pharmaceutical sciences, physical education, nursing, health management and psychology), humanities (visual arts, social sciences, nature sciences and administration), agrarian (veterinary medicine and zootechnics) and exact areas (agricultural and environmental engineering, agronomic engineering, civil engineering, computing engineering and production engineering).

The criteria established for the inclusion of participants in the program were minimum frequency of 4 times a week, presence of 75% in training sessions, participation in lectures and guidelines, as well as physical evaluation, 3 reassessments in 1 year and answering all questionnaires proposed by the project.

Instruments

All participants voluntarily signed the Free and Informed Consent Form, underwent physical evaluations and presented a medical certificate of fitness for physical exercise. In addition, all participants responded to an anamnesis and the revised Physical Activity Readiness Questionnaire PAR-Q[8].

To collect variables sex, age, link to the university, area of activity and schooling, a socio-demographic questionnaire was prepared. Body mass and height were assessed by trained evaluators; BMI was determined by dividing body mass (Kg) by the square height (m). BMI classification criteria were those recommended by the World Health Organization – WHO[9], which adopts for underweight grades I, II and III, respectively, 17.0> BMI <18.5, 16.0> BMI <17.0 and BMI <16.0; adequate weight 18.5> BMI <25.0, while for overweight and obesity grades I, II and III, 25.0> BMI <30.0, 30.0> BMI <40.0 and BMI > 40.0 kg/m^2, respectively. For classification of individuals of both sexes under the age of 18 years, the WHO BMI Z Score was applied, which considers slim / malnourished (Z Score <-2), eutrophic (Z Score ≥ -2 and ≤ +1), overweight (Z score ≥ +1 - equivalent to BMI 25 kg/m^2 at the age of 19 years - and ≤ +2), obesity (Z score> +2 - equivalent to BMI 30 kg/m^2 at the age of 19 years - and ≤ +3) and severe obesity (Z score> +3).

LPA was evaluated using the International Physical Activity Questionnaire (IPAQ) - short version, which has validation for the Brazilian population[10]. To estimate levels of physical activity, intensity, duration and weekly frequency of physical activity in the form of walking, moderate and vigorous activities in different contexts of physical activity were considered. Questions were open and participants self-reported the time

in minutes and the weekly frequency of activity. Thus, LPA was estimated by the product between duration (minutes/day) and frequency (day/week). For the classification of levels of physical activity, the following categories were used: "active", participants that reached or exceeded 150 min/week; "insufficiently active", those who perform PA but insufficient to be classified as active; and "sedentary", those who did not perform any PA.

Procedures

This research is linked to the "Academia Universitária" extension project, approved by the Ethics Committee on Research with Human Beings of UNIVASF, Petrolina-PE, under protocol No. 383969/2010. Initially, authorization from the coordination of the extension project was requested to conduct the research. Data collection took place in the first half of 2015 on the university premises and development of the extension project. Questionnaires lasted approximately 30 minutes to be responded and were applied by duly trained individuals, being filled in a self-administered and individual way. The order of questionnaires was randomized among participants.

Statistical analysis

For data analysis, frequency and percentage were used for categorical variables. For numerical variables, data normality was initially verified using the Kolmogorov-Smirnov test. Due to the non-normality of data, Median (Md) and Quartiles (Q1; Q3) were used for the characterization of results. Pearson's Chi-square test (χ^2) was performed to observe possible associations between independent variables (sex, link to the university, area of activity, schooling) and LPA. Multinomial logistic regression analysis with robust adjustment of variance, crude and adjusted, was also used to estimate prevalence ratios and 95% confidence intervals.

For modeling the logistic regression analysis, only variables with significance level equal to or less than 0.20 for association in the Chi-square test were considered. In the adjusted analysis, all variables were included in the model, regardless of p-value in the crude analysis. Significance level of $p < 0.05$ was considered and the software used was SPSS version 22.0.

RESULTS

Of the 685 individuals evaluated (285 men and 400 women), higher prevalence of students was observed (Table 1) (70.50%), followed by administrative technicians (22.30%) and teachers (7.20%). In relation to the area of activity, there was higher prevalence of individuals from the health area (48.90%), followed by humanities (28.80%), exact (13.00%) and agrarian areas (9.30%).

There was higher proportion of individuals with Graduation / Specialization level (52.40%) followed by High School / Technical (38.80%) and Master / Doctorate levels (8.80%). Regarding body mass, it was observed that 45.7% of individuals were classified as with normal BMI, in addition

to those overweight (24.8%), obese (15.3%) and underweight (14.2%). However, it is noteworthy that 40.1% are above the BMI considered within normal range (BMI ≥ 30 kg / m^2).

Table 1. Frequency distribution of the profile of participants of the "Academia Universitária" extension project - Federal University of Vale do São Francisco, Petrolina (PE), 2015, n = 685.

Variables	n	%
Sex		
Male	285	41.60
Female	400	58.40
Link to the university		
Students	483	70.50
Teachers	49	7.20
Administrative Technicians	153	22.30
Area of activity		
Health	335	48.90
Exact	89	13.00
Humanities	197	28.80
Agrarian	64	9.30
Schooling		
High school/Technical	266	38.80
Graduation/Specialization	359	52.40
Master/Doctorate	60	8.80
BMI		
Underweight	97	14.20
Normal weight	313	45.70
Overweight	170	24.80
Obesity	105	15.30
Level of physical activity		
Sedentary	79	11.50
Insufficiently active	183	26.70
Active	423	61.80

The anthropometric characteristics of the sample are shown in Table 2, in which the average age of participants was 28.0 ± 8.7 years, average body weight of 70.2 ± 15.3 kg and average height of 1.7 ± 0.1 meters. Regarding BMI, participants were, on average, classified within normal values (24.8 ± 4.6 kg/m^2).

When analyzing the association of LPA with sex, link to the university, area of activity and schooling of participants in the "Academia Universitária" extension project (Table 3), significant association between LPA and link to the University (p = 0.001), area of activity (p = 0.002) and schooling (p = 0.011) was observed, showing higher proportion of active individuals among those with link as students (f = 324) and belonging to the health area (f = 217) with graduation / specialization level (f = 227). There was no significant association between LPA and sex (p = 0.442) (see Table 3).

Table 2. Anthropometric characteristics of participants of the "Academia Universitária" extension project - Federal University of Vale do São Francisco, Petrolina (PE), 2015, n = 685.

Variables	Age (years)	Weight (kg)	Height (m)	BMI (kg/m²)
	x ± sd	x ± sd	x ± sd	x ± sd
Sex				
Male	27.44 ± 7.91	79.11 ± 14.34	1.75 ± 0.07	25.72 ± 4.31
Female	28.28 ± 9.23	63.41 ± 12.33	1.62 ± 0.06	24.06 ± 4.65
Link to the university				
Students	24.23 ± 5.31	68.75 ± 15.09	1.69 ± 0.09	24.07 ± 4.40
Teachers	39.39 ± 8.26	76.62 ± 14.00	1.69 ± 0.08	26.70 ± 3.91
Administrative Technicians	35.69 ± 9.09	72.75 ± 15.83	1.66 ± 0.10	26.40 ± 4.76

Note: x = mean; sd = standard deviation; BMI = body mass index.

Table 3. Association of level of physical activity with sex, city, link to the university, area of activity and schooling of participants in the "Academia Universitária" extension project - Federal University of Vale do São Francisco, Petrolina (PE), 2015, n = 685.

Variables	Level of physical activity			X^2	P
	Sedentary (n=79)	Insufficiently Active (n=183)	Active (n=423)		
	n (%)	n (%)	n (%)		
Sex					
Male	31 (39.20)	73 (39.90)	181 (42.80)	0.590	0.442
Female	48 (60.8)	110 (60.10)	242 (57.20)		
Link to the university					
Students	35 (44.30)	124 (67.80)	324 (76.60)		
Teachers	11 (13.90)	16 (8.70)	22 (5.20)	27.371	0.001*
Administrative technicians	33 (41.80)	43 (23.50)	77 (18.20)		
Area of activity					
health area	25 (31.60)	93 (50.80)	217 (51.30)		
Exact area	6 (7.60)	21 (11.50)	62 (14.70)	9.805	0.002*
Humanities	41 (51.90)	49 (26.80)	107 (25.30)		
Agrarian area	7 (8.90)	20 (10.90)	37 (8.70)		
Schooling					
High school/Technical	20 (25.3)	79 (43.2)	167 (39.5)		
Graduation/Specialization	45 (57.0)	87 (47.5)	227 (53.7)	6.413	0.011*
Master / Doctorate	14 (17.7)	17 (9.3)	29 (6.8)		

Note. * Significant association - p <0.05: Chi-square test.

According to results of the multinomial logistic regression (Table 4), significant association (p<0.05) of LPA with all academic variables was observed in the crude analysis, showing that administrative technicians and teachers are, respectively, 3.97 (95% CI = 2.32-6.78) and 4.63 (95% CI = 2.07-10.34) times more likely of being sedentary when compared to students. In addition, it was evidenced that individuals from the humanities area and those with Master/ Doctorate level are respectively three and four times more likely of being sedentary in comparison to individuals from the health area and with High school / Technical level.

Table 4. Multinomial logistic regression analysis between level of physical activity (reference category: active) and academic variables (link to the university, area of activity and schooling) of participants of the "Academia Universitária" project - Federal University of Vale do São Francisco, Petrolina (PE), 2015, n = 685.

Variables	Level of physical activity			
	Insufficiently active		Sedentary	
	OR (95% CI)†	OR (95% CI)††	OR (95% CI)†	OR (95% CI)††
Link to the university				
Students	1	1	1	1
Technicians	1.46 [0.95-2.24]	1.88 [1.02-3.58]*	3.97 [2.32-6.78]*	2.15 [1.03-4.66]*
Teachers	1.90 [0.97-3.74]	2.78 [0.95-8.11]	4.63 [2.07-10.34]*	3.62 [1.11-11.82]*
Area of activity				
Health	1	1	1	1
Exact	0.79 [0.45-1.37]	0.70 [0.40-1.24]	0.84 [0.33-2.13]	0.66 [0.25-1.76]
Humanities	1.07 [0.70-1.63]	0.73 [0.39-1.34]	3.33 [1.92-5.75]*	2.02 [0.94-4.36]
Agrarian	1.26 [0.69-2.28]	1.22 [0.66-2.25]	1.64 [0.66-4.07]	1.34 [0.52-3.43]
Schooling				
High school / Technical	1	1	1	1
Graduation / Specialization	0.81 [0.56-1.17]	0.77 [0.53-1.12]	1.65 [0.94-2.91]	1.46 [0.82-2.61]
Master / Doctorate	1.24 [0.64-2.39]	0.61 [0.22-1.69]	4.03 [1.83-8.87]*	1.76 [0.58-5.34]

Note. OR = odds ratio. CI = confidence interval. † Crude analysis; †† Analysis adjusted for all academic variables. * p <0.05: Multinomial Logistic Regression.

In the adjusted analysis (Table 4), only the association between LPA and link to the university (p <0.05) remained. It is noteworthy that teachers and administrative technicians were, respectively, 3.62 (95% CI = 1.11-11.82) and 2.15 (95% CI = 1.03-4.66) times more likely of being sedentary when compared to students. In addition, when compared to active students, technicians were 1.88 [1.02-3.58] times more likely of being insufficiently active. It was also found that in the group of teachers and administrative technicians, the proportion of sedentary individuals in relation to active individuals is multiplied by 3.62 and 2.15, respectively. It was also found that administrative technicians are 1.88 times (95% CI = 1.02-3.58) more likely of being insufficiently active when compared to students. In addition, it was found that technicians are approximately 2 times more likely of being insufficiently active than active.

DISCUSSION

The aim of the present study was to investigate the level of physical activity in individuals linked to a federal higher education institution in north-eastern Brazil and associated factors. The main findings were: i) 61.8% of individuals were classified as active, 26.7% as insufficiently active and 11.5% as sedentary; highlighting that 67% of students, 44.9% of teachers and 50.3% of administrative technicians were classified as active; ii) greater proportion of individuals classified as active were students (*f* = 324) from the health area (*f* = 217) with undergraduate / specialization level (*f* = 227); iii) administrative technicians and teachers were, respectively, from three (95% CI = 2.32-6.78) to four (95% CI = 2.07-10.34) times more likely of being

sedentary when compared to students; iv) individuals from the humanities area and those with Master / Doctorate level were respectively three and four times more likely of being sedentary compared to individuals from the health area and with High school/ Technical level.

The frequencies observed for men and women were similar, with no significant differences. The number of active women participating in the program was higher, as in the study by Moura Júnior et al.[11]; however, these results are consistent with other studies that point that males are more active[12,13]. Some studies point that the practice of physical activity by women is more related to field activities, exercise groups and walks[6]. This premise was confirmed by the findings of Gonçalves et al.[14], who reported that women are those who most adhere to and attend these university extension activities.

In the present study, there was higher prevalence of students (70.5%) in the "Academia Universitária" project in relation to administrative technicians (22.3%) and teachers (7.2%), as well as higher LPA among students. This may, in part, be justified by the hypothesis that undergraduate students have more leisure time and less work routine when compared to teachers and administrative technicians who, in general, have daily workload between 6 to 8 hours and remain seated most of the time[12].

The multinomial regression of the present results revealed that administrative technicians and teachers are more likely of being sedentary compared to students, despite the fact that administrative technicians were more classified as insufficiently active than the other groups. Corroborating these findings, Toscano et al.[15] observed that approximately 65% of public servants were insufficiently active and with high level of sedentary behavior at work (88.5%), which was measured in relation to sitting time (> 3.5h / day). In addition, individuals aged 18-24 years and with higher schooling were classified as more active than individuals of all older age groups. In this case, the extensive working hours can be highlighted as possible barrier for administrative technicians, which would justify their greater likelihood of being sedentary, a fact also observed by the present study. However, as for teachers, the plausible explanation for the results found would be the great requirement for the production of knowledge, with work overload and less leisure time[16].

Individuals from the humanities and those with master / doctoral level were the groups with the highest level of sedentary behavior. This fact is probably justified by the reduction of leisure time for physical activity found in these groups, as previously discussed. The highest participation in the project was of individuals from the health area (48.9%), data corroborated by Mielke et al.[7], who pointed out higher frequency of individuals (~ 28%) linked to courses in the health area. It is noteworthy that Physical Education students (Bachelor and Licentiate) seem to be those who practice more intense physical activities [17]. However, it is extremely important to highlight that the university extension project took place on the campus of Petrolina-PE, which, in turn, has the largest number of courses in the health area,

which would justify, in part, the larger number of participants from this area.

The level of physical activity was higher in participants with graduation / specialization level (52.4%) than in those with high school / technical level (38.8%). This observation may be related to the schooling level, where individuals with lower schooling are less aware of the importance of adopting regular physical activities as a form of leisure in order to avoid diseases[11]. However, in comparison with participants with master / doctorate level (8.8%), the number was even lower. Nevertheless, studies have shown that the higher the schooling level, the greater the barriers to the practice of physical activity due to the lack of time, lack of opportunity, health problems and lack of suitable place[11,18]. In this sense, Mielke et al.[13] observed that individuals with higher schooling (Grade IV - complete graduation) were 3.03 times (95% CI 2.78 - 3.29) more active in leisure compared to those with lower schooling (Grade I – no schooling or incomplete elementary school).

Regarding the anthropometric profile, most participants (45.7%) had adequate weight and BMI in the normal range (24.8 kg/m^2). This is probably due to the higher proportion of individuals classified as physically active, since the frequency and intensity of PA can cause changes in body composition, especially in body fat and lean mass, being an important factor in weight adequacy[19]. This is evident when summing up the number of overweight and obese individuals (40.10%) with those classified as sedentary and insufficiently active (38.20%), showing that in relative values, the low level of physical activity seems be an indicative factor of weight gain[20]. However, this behavior dynamic does not seem to be true in an extension project in the southeastern region of Brazil, which demonstrated that even with predominance of physically active participants, the general average BMI values classified them as overweight[14].

Assessing the LPA of participants, the highest prevalence was "active" (61.8%), followed by 26.7% "insufficiently active" and 11.5% "sedentary". These results were corroborated by Moura Júnior et al.[11], Mielke et al.[7] and Polisseni and Ribeiro[16]. However, studies also point to insufficient LPA, mainly in adults, technicians and teachers[16, 17, 21].

Despite not having assessed the sample's LPA by distinguishing between courses, the present study showed higher proportion of individuals classified as "very active / active" who have student link (f = 324), from the health area (f = 217) and with undergraduate / specialization level (f = 227). This is consistent with results of Silva [22] and Melo et al.[23], since among Physical Education students at a university also in northeastern Brazil, 10.6% (95% CI: 6.5-14.7) were considered to be physically inactive, while 14% of academicians at a university in southeastern Brazil were classified as physically inactive.

In this sense, considering that the practice of physical activity in the university environment may not be sufficient to result in changes in the level of physical activity and fitness, interventions involving awareness, information and encouragement to the practice of physical activity and

adequate nutritional guidance are also suggested. Guimarães et al.[24] promoted an extension program for civil servants at a public university in Paraná and observed that after three months of nutritional guidance and physical activity, improvement in the anthropometric profile and increase in LPA were observed.

CONCLUSION

Based on the analysis and discussion of results, it could be concluded that the LPA of participants of the "Academia Universitária" project was higher among undergraduate students. Teachers and technicians were more likely of being sedentary. Thus, it is necessary to encourage interventions for the practice of physical activity within the academic community, in addition to the implementation of internal policies that mobilize public servants in general to improve the worrying situation of sedentary behavior.

In addition, teachers and administrative technicians were more likely of being classified as sedentary. Most participants had normal BMI, most individuals classified as "very active/active" were students from the health area with undergraduate/specialization level. Individuals from the humanities, as well as those with master/doctoral level, were those with the highest prevalence of sedentary behavior.

Therefore, it appears that the time spent in the university premises can be improved and optimized with physical activity programs aimed at the academic community for the regular practice of physical exercises, which would bring benefits to the health of those involved. Even in groups with lower adherence, such practice must be implemented through the application of future studies as a way of identifying and searching for strategies that meet the needs of such groups so that they feel motivated to perform physical activities, thus increasing adherence to extension projects.

COMPLIANCE WITH ETHICAL STANDARDS

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or non-profit sectors. This study was funded by the authors

Ethical approval

Ethical approval was obtained from the local Human Research Ethics Committee – UNIVASF and protocol (No. 383969/2010) was written in accordance with the standards set by the Declaration of Helsinki.

Conflict of interest statement

The authors have no conflict of interests to declare.

Author Contributions

Conceived and designed the experiments: JBS; JRANJ; FOC. Performed

the experiments: JBS; LPS; CMMA. Analyzed data: RAM; JRANJ; JFVNM; FOC. Contributed with reagents/materials/analysis tools: JBS; JRANJ; FOC. Wrote the paper: JBS; RAM; FOC.

REFERENCES

1. Eurosurveillance editorial t. WHO launches the World Health Statistics 2012. Euro Surveill. 2012;17(20).
2. Malta DC, Szwarcwald CL. Lifestyles and chronic non-transmissible diseases of the Brazilian population according to the National Health Survey: balance of the main results. Sao Paulo Med J 2015;133(4):286-9.
3. Dore I, O'Loughlin JL, Beauchamp G, Martineau M, Fournier L. Volume and social context of physical activity in association with mental health, anxiety and depression among youth. Prev Med 2016;91:344-50.
4. Heesch KC, van Gellecum YR, Burton NW, van Uffelen JGZ, Brown WJ. Physical activity and quality of life in older women with a history of depressive symptoms. Prev Med 2016;91:299-305.
5. Dalziell A, Boyle J, Mutrie N. Better Movers and Thinkers (BMT): An Exploratory Study of an Innovative Approach to Physical Education. Eur J Psychol 2015;11(4):722-41.
6. Joseph RP, Royse KE, Benitez TJ, Pekmezi DW. Physical activity and quality of life among university students: exploring self-efficacy, self-esteem, and affect as potential mediators. Qual Life Res 2014;23(2):659-67.
7. Mielke GIR, T.R.; Habeyche, E.C.; Oliz, M.M.; Tessmer, M.G.S.; Azevedo, M.R.; Hallal, P.C. Atividade física e fatores associados em universitários do primeiro ano da Universidade Federal de Pelotas. Rev Bras Ativ Fís Saúde 2010;15(1).
8. Adams R. Revised Physical Activity Readiness Questionnaire. Can Fam Physician 1999;45:992, 5, 1004-5.
9. Organization) WWH. Physical Status: The Use and Interpretation of Anthropometry - Report of a WHO Expert Commitee. Series WTR, editor1995.
10. Matsudo S AT, Matsudo V, Andrade D, Andrade E, Oliveira LC. Questionário Internacional de Atividade Física (IPAQ): estudo de validade e reprodutibilidade no Brasil. Rev Bras Ativ Fís Saúde 2001;6(1).
11. Moura Junior JSF, D.K.S.; Martins, M.O.; De Lima, N.M.M. Nível de atividade física e perfil sociodemográfico dos usuários dos ambientes públicos de atividades físicas na cidade de João Pesssoa-PB. Rev Bras Ciên Saúde 2011;15(3).
12. Mendes-Netto RS, Silva CS, Costa D, Raposo OFF. Nível de atividade física e qualidade de vida de estudantes universitários da área de saúde. Rev Bras Ciên Saúde 2012;10(34):47-55.
13. Mielke GI, Malta DC, Sá GB, Reis RS, Hallal PC. Diferenças regionais e fatores associados à prática de atividade física no lazer no Brasil: resultados da Pesquisa Nacional de Saúde-2013. Rev Bras Epidemiol 2015; 18(Suppl 2):158-169.
14. Gonçalves AFL, Souza GM, Brito NA, Moraes SS, Digiovani RAB, Ferreira RC, Nogueira LSR, Silvestre AL, Pacagnelli FL. Nível de atividade física e prevalência de fatores de risco cardiovasculares de participantes de projeto de extensão interdisciplinar. Colloquium Vitae 2013;5(2):119-126.
15. Toscano JJO, Zefferino ACG, Felix JBC, Cabral Júnior CR, Silva DAS. Pain prevalence on public servants: association with sedentary behavior and physical leisure activity. Rev Dor 2016; 17(2):106-110.
16. Polisseni MLC, Ribeiro LC. Exercício físico como fator de proteção para a saúde em servidores públicos. Rev Bras Med Esporte 2014;20(5):340-44.
17. Claumamm GS, Pereira EF, Pelegrini A. Prática de caminhada, atividade física moderada e vigorosa e fatores associados em estudantes do primeiro ano de uma instituição de ensino superior. Motri 2014;10(4):16-26.

18. Oliveira CS, Gordia AP, Quadros, TMB, Campos W. Atividade física de universitários brasileiros: uma revisão da literatura. Rev Aten Saúde 2014;12(42):71-77.
19. Aoi W, Naito Y, Yoshikawa T. Dietary exercise as a novel strategy for the prevention and treatment of metabolic syndrome: effects on skeletal muscle function. J Nutr Metab 2011;2011:676208.
20. Rocha SV, Pie ACS, Cardoso JP, Amorim CR, Carneiro LR, Vilela ABA. Nível de atividade física entre funcionários de uma instituição de nível superior da Bahia. Ulbra Mov Rev Educ Fís 2011;2(1):16-29.
21. Del Duca GF, Nahas MV, Garcia LM, Mota J, Hallal PC, Peres MA. Prevalence and sociodemographic correlates of all domains of physical activity in Brazilian adults. Prev Med 2013;56(2):99-102.
22. Silva DAS. Nível de atividade física e fatores associados em acadêmicos de educação física de uma universidade pública do nordeste do Brasil. Rev Bras Ativ Fís Saúde 2011;16(3):193-198.
23. Melo AB, Carvalho EM, de Sá FGS, Cordeiro JP, Leopoldo AS, Lima-Leopoldo AP. Nível de atividade física dos estudantes de graduação em Educação física da Universidade Federal do Espírito Santo. J Phys Educ 2016;27:e2723.
24. Guimarães AA, Bortolozo EAFQ, Lima DFR. Prevenção de fatores de risco para doenças cardiovasculares: programa de nutrição e prática de atividade física para servidores de uma universidade pública do estado do Paraná. Rev Eletron FAFIT/FACIC 2013;04(1):10-18.

Corresponding author
Ferdinando Oliveira Carvalho
College of Physical Education – CEFIS
José de Sá Maniçoba Avenue, S/N - Centro
CEP: 56304-917 - Petrolina/PE, Brazil
Email: ferdinando.carvalho@univasf.edu.br