Original Article

Revista Brasileira de Atividade Física & Saúde
Brazilian Journal of Physical Activity and Health
RBAFS SOCIEDADE BRASILEIRA DE ATIVIDADE FÍSICA E SAÚDE

Rev Bras Ativ Fís Saúde p. 476-482
DOI
http://dx.doi.org/10.12820/rbafs.v.20n5p476

Quality of life, stages of behavioral changes and physical activity level of Physical Education students

Qualidade de vida, estágios de mudança de comportamento e nível de atividade física dos acadêmicos de Educação Física

Bruna Daniella de Vasconcelos Costa[1]
Gilmário Ricarte Batista[2]
Nicelle Eustáquio Souza Leão[3]
Pedro Pinheiro Paes[4]

1 Graduated in Physical Education from UFPE, Recife-PE, Brazil

2 Professor of the Department of Physical Education at UFPB, João Pessoa-PB, Brazil

3 Undergraduate Physical Education student at UFPE, Recife-PE, Brazil

4 Professor of the Department of Physical Education at UFPE, Recife-PE, Brazil

ABSTRACT

The aim of this study was to identify the stages of behavioral change (SBC) and compare quality of life (QOL) and physical activity level between first-year and last-year undergraduate Physical Education students at a public university in Pernambuco state, Northeastern Brazil. This is a descriptive study with a cross-sectional design. The sample consisted of 199 undergraduate Physical Education students, enrolled in the first, second, seventh and eighth semesters of their course, with a mean age of 21.32 ± 4.00 years, of which 61.80% were first-year students (enrolled in the first and second semesters). Behavioral change was verified with the SBC questionnaire, QOL with the WHOQOL-Bref and physical activity level with the International Physical Activity Questionnaire (IPAQ). Student's t-test and Chi-square test were used for data analysis, with a 5% significance level. The most prevalent SBC was in the Action stage (first-year students: 53.3% and last-year students: 43.9%). There were significant differences in the social ($p < 0.01$) and environmental ($p<0.01$) domains. Regarding the physical activity level, 82.93% of first-year students and 86.84% of last-year students were physically active. Both groups of students showed relatively positive QOL, SBC and physical activity level, although QOL differed in terms of sociability and environmental adaptation.

KEYWORDS

Motor Activity; Physical Education; Higher Education.

RESUMO

O objetivo do presente estudo foi identificar os estágios de mudança de comportamento (EMC) e comparar a qualidade de vida (QV) e o nível de atividade física entre acadêmicos ingressantes e formandos do curso de Educação Física de uma universidade pública de Pernambuco. Trata-se de uma pesquisa descritiva com delineamento transversal. A amostra foi constituída por 199 acadêmicos do curso de Educação Física, matriculados no primeiro, segundo, sétimo e oitavo períodos, com média de idade de 21,32±4,00 anos, sendo 61,80% ingressantes (primeiro e segundo períodos). A mudança de comportamento foi verificada pelo questionário EMC, a QV pelo Whoqol-Bref e o nível de atividade física pelo International Physical Activity Questionnaire (IPAQ). Para análise dos dados foram utilizados o teste t de Student e Qui-quadrado, com nível de significância de 5%. O EMC com maior prevalência foi o estágio de Ação (ingressantes: 53,3% e formandos: 43,9%). Foram encontradas diferenças significativas nos domínios social ($p<0,01$) e ambiental ($p<0,01$). Quanto ao nível de atividade física, 82,93% dos ingressantes e 86,84% dos formandos foram fisicamente ativos. Percebe-se que os discentes ingressantes e formandos demonstraram QV, EMC e nível de atividade física relativamente positivas, mas diferem na QV nos aspectos de sociabilidade e adaptação ao meio ambiente.

PALAVRAS-CHAVE

Atividade motora; Educação Física; Ensino superior.

INTRODUCTION

Quality of life (QOL) can be understood as a set of parameters that influence individuals' perception of the environment in which they live culturally and expectedly, considering personal and socio-environmental factors[1]. Factors such as physical inactivity and physical activity level directly influence QOL in all people[2] and in their different stages of life[3], especially during the transition between adolescence and adulthood, a period that usually coincides with university life.

Thus, this stage of life is essential to prevent inactive behavior, as studies have shown that this type of behavior, together with smoking and inadequate eating habits, are risk factors which cause the development of several diseases when associated with lifestyle, especially chronic-degenerative ones, such as heart conditions, cancer, hypertension, diabetes mellitus and obesity[4-5]. In this sense, universities must develop strategies to promote an active lifestyle[6] and, most importantly, promote QOL among students.

In view of the consequences of inactive behavior, several measures have been taken to encourage physical activity practice in the sphere of public health[7]. In this context, the search for a healthy lifestyle, including not only the practice of regular physical activity, but also adequate eating habits, sufficient hours of sleep, absence of alcohol drinking and smoking, leisure time, and emotional and stress control are key to improve QOL and health[8-11].

Entering university is considered to be a stressful factor that enables new social relationships to be formed and new behaviors to be acquired, which throughout time can enable significant bio-psychosocial instabilities, leading to students' vulnerabilities to circumstances involving risk factors[6]. Overweight and stress are some of these behaviors[12].

Health habits and behaviors acquired during childhood and adolescence tend to stabilize in adult life[11]. Entering university may create conflicts in students' lifestyle. In this sense, universities must promote physical activity programs for these young people[6]. Moreover, it is believed that there are variations in behavior among first-year and last-year students. Due to the importance of studies in this area, further knowledge about the academic life of students is required, seeking to identify their QOL, physical activity level and, mainly, stages of behavioral change related to health, thus having an effect on lifestyle[13].

Given this situation, the present study aimed to identify the stages of behavioral change (SBC) and compare QOL and physical activity level between first-year and last-year students enrolled in the Physical Education course of a public university of Pernambuco state, Northeastern Brazil.

METHODS

A descriptive cross-sectional study was performed. Participants were Physical Education students enrolled at the *Universidade Federal de Pernambuco* (UFPE – Federal University of Pernambuco). All university students enrolled in the first, second, seventh and eighth semesters of their course were included in this study for the selection of procedures (n = 199 students). These students were subsequently divided into two groups: group 1 was comprised of first-year students (first and second semesters, n = 123) and group 2 included last-

year students (seventh and eighth semesters, n = 76). Only university students enrolled in the second semester of 2012 and first semester of 2013 were included in the study. All of them accepted to participate in this research project.

The present study was approved by the Research Ethics Committee of UFPE's Health Sciences Center (Protocol 276/11). All participants signed an Informed Consent Form after the research protocols were explained to them.

SBC, QOL and physical activity level were assessed. Assessment instruments were distributed in the classrooms during class breaks. Behavioral changes in university students were assessed through the SBC questionnaire[14], which categorizes individuals into five stages: 1) Pre-contemplation (intending to change their behavior in the near future); 2) Contemplation (intending to change their behavior, although not immediately); 3) Preparation (intending to change their behavior in the next six months); 4) Action (behavioral changes have recently been made); and 5) Maintenance (behavioral changes have been maintained for more than six months).

The instrument used to assess QOL was the Whoqol-Bref, developed by the World Health Organization (WHO). The Whoqol-Bref is the short version comprised of the 26 questions that achieved the best psychometric performances and were thus extracted from the WHOQOL-100. This full instrument includes four domains: physical domain (pain and discomfort, energy and fatigue, sleep and rest, mobility, daily life activities, dependence on medication or treatments and ability to work); psychological domain (positive feelings, thinking, learning, memory and concentration, self-esteem, body image and appearance, negative feelings, spirituality, religion and personal beliefs); social domain (personal relationships, social support, sexual activity); environmental domain (physical safety and protection, home environment, financial resources, health and social care, the opportunity to acquire new information and skills, the opportunity to have leisure time and participation in such activities, physical environment: pollution, noise, traffic, weather and transport).

Of all 26 questions, two are general QOL questions and the remaining ones represent each of the 24 aspects comprising the original instrument[15]. Scores were fit into a 0-100 scale to represent the Whoqol-Bref domain scores, where the worst values were close to zero and the best ones were close to 100[16].

The short version of the International Physical Activity Questionnaire (IPAQ) was used to assess physical activity level, which enables the weekly time spent on walks and moderate to vigorous physical activities to be estimated[17,18]. Physical activity level was dichotomized into physically active students (very active + active) and physically inactive students (irregularly active A and B + inactive students)[19].

Data were analyzed with the BioEstat 5.3 program and data normality was verified with the Kolmogorov-Smirnov test. Data were described as mean, standard deviation and percentage. Student's t-test was used to observe the differences between first-year and last-year students and the Chi-square test was used to analyze physical activity level, considering a 5% significance level.

RESULTS

The study sample was comprised of 199 Physical Education students from UFPE with a mean age of 21.32±4.00 years, of which 123 (61.81%) were first-year and

76 (38.19%) were last-year students. Table 1 shows the SBC, whose most prevalent values were Maintenance for 43.9% of first-year and 55.3% of last-year students, followed by Action for 27.6% of first-year and 21.1% of last-year students.

TABLE 1 – Stages of behavioral change among first-year and last-year Physical Education students at UFPE, PE, Brazil, 2014.

SBC	First-year students (%)	Last-year students (%)
Pre-contemplation	1 (0.8)	-
Contemplation	2 (1.6)	4 (5.3)
Preparation	32 (26.0)	14 (18.4)
Action	34 (27.0)	16 (21.1)
Maintenance	54 (43.9)	42 (53.3)

SBC = States of Behavioral Change

Table 2 shows the results obtained from the Whoqol-Bref, revealing that the physical (p= 0.07) and psychological domains (p= 0.97) did not show significant differences between first-year and last-year students, although substantial differences were found in the social (p< 0.01) and environmental domains (p< 0.01).

TABLE 2 – Comparison of quality of life domains between first-year and last-year Physical Education students at UFPE, PE, Brazil, 2014.

Quality of life	First-year	Last-year	p-value*
Physical	70.56 ± 12.59	73.93 ± 13.54	0.08
Psychological	73.49 ± 12.59	73.50 ± 11.38	0.99
Social	72.93 ± 16.96	80.04 ± 13.61	< 0.01*
Environmental	56.42 ± 13.00	62.97 ± 14.60	< 0.01*

*p< 0.05; Student's t-test.

Table 3 shows the comparisons of physical activity levels between first-year and last-year students. The results did not show statistically significant differences.

TABLE 3 – Comparison of physical activity level between first-year and last-year Physical Education students at UFPE, PE, Brazil, 2014.

	Physically active	Physically inactive	p-value*
First-year students (n%)	102 (82.93)	21 (17.07)	0.59
Last-year students (n%)	66 (86.84)	10 (13.16)	

*p< 0.05; Chi-square test.

DISCUSSION

Studies that observe QOL, SBC and physical activity level are important to plan public policies for health promotion. In this sense, the present study corroborates with relevant data on promoting a healthier lifestyle, especially because participants are university students, whose future jobs will be closely associated with the health of the population. Thus, when the results were analyzed, positive associations with QOL, SBC and physical activity level were observed.

These findings are justified by the nature of the Physical Education course itself. As this course is from the area of health, students are taught a set of theoretical and practical disciplines whose contents are associated with the pro-

motion of a healthy lifestyle and improvement in QOL. Experiences during the course enable students to maintain healthy habits, including the practice of physical activity, as part of the school curriculum itself[20].

With regard to QOL domains of first-year and last-year students, the scores found were higher than 70 points, except for the environmental domain, similarly to the findings from Cieslak et al.[21] and Souza et al[22], who also investigated QOL domains among Physical Education students. In both studies, differences were found between the physical and psychological domains, in addition to the environmental domain, as observed in the present study.

With regard to the psychological domain, many studies agree with the results found in this study[20,24], when the population studied is comprised of Physical Education students, i.e. these students feel good about their physical appearance, body image and self-esteem, and the regular practice of physical exercises is one of the main factors responsible for this feeling of well-being[25]. This situation is not found in other courses, as observed in a study conducted with medical students, where the psychological domain showed significant differences between first-year and last-year students, contributing to the reduction in their QOL at the end of the course[26]. This difference between courses can be partly explained by the significantly higher psychological pressure found in the medical course, whose students are constantly involved with procedures associated with the treatment of illnesses, whereas Physical Education students have activities more geared towards health prevention and maintenance.

Taking into consideration the environmental domain, first-year and last-year students had lower values when compared to other domains, corroborating with some studies that analyzed and compared such students, finding lower values in the same domain[20,27]. These values may be partly explained by the study conditions of these students, as it is known that the environmental domain includes issues related to the physical environment such as weather, noise and pollution[28].

The differences found in the social and environmental domains showed that last-year students feel more socially supported, have better social relationships, and feel safer in the work and home environments. Perhaps because they are graduating soon, many have financial resources obtained through internships and, consequently, they are enrolled in fewer disciplines, which enable them to spend more time on leisure activities.

With regard to SBC, the results of this study were similar to those obtained by Augusto et al.[29], who investigated 270 Physical Education students and found a higher prevalence in the SBC for Maintenance (38.7%). However, another study performed with 862 university students from 29 courses found more prevalent values in the stages for Contemplation and Preparation[6].

The results obtained on physical activity level showed that the majority of university students have a physically active life and are not influenced by the fact of being in the beginning or end of their course. A study performed with 280 students, of which 194 were enrolled in the Physical Education course, found no differences in physical activity level by gender and concluded that such level remained constant throughout their course.[29,30]. In this sense, it seems that the Physical Education course encourages an active lifestyle, from the moment one enters university to the end of this course, usually motivated by the practice of sports and physical exercises in schools and clubs, supported by the large number of practical activities developed.

In conclusion, the present study indicates that QOL, SBC and physical activity level showed positive values among Physical Education students. Additionally, it was observed that QOL showed differences between first-year and last-year students in the social and environmental domains, showing that these domains may infer that the latter have achieved more socially, including better interpersonal relationships and greater job security and living in a safer area.

Studies with this type of approach are relevant to support and guide students towards adopting a healthier lifestyle. However, one of the limitations of the present study was the fact that it has a cross-sectional design, not enabling causal relations to be determined. Another limitation was the establishment of instruments assessed through self-reports, thus dependent on participants' memory accuracy.

Authors' contributions

authors actively participated in the preparation of the present study. Bruna Daniella de Vasconcelos Costa was the author of the first version of the manuscript. Nicelle Eustáquio de Souza Leão participated in the data collection and interpretation, reviewing the final version of the manuscript. Gilmário Ricarte Batista was the research co-supervisor, providing statistical and text reviewing support. Pedro Pinheiro Paes was responsible for the study supervision and participated in all stages of preparation of this study.

REFERENCES

1. Skevington SM, Lotfy M, O'Connell KA. The World Health Organization's WHOQOL BREF quality of life assessment: Psychometric properties and results of the international field trial A Report from the WHOQOL Group. Qual Life Res. 2004; 13(2):299-10.
2. Chaim J, Raimundo ME, Ferreira CAS, Yuaso DR. Prática regular de atividade física e sedentarismo: influência na qualidade de vida de idosas. RBCEH. 2010; 7(2):198-209.
3. Dumith SC, Domingues MR, Gigante DP. Estágios de mudança de comportamento para a prática de atividade física: uma revisão da literatura. Rev Bras Cineantropom Desempenho Hum. 2008; 10(3):301-7.
4. Bara Filho MG, Biesek S, Fernandes A, Araújo CGS. Comparação de atividade física e peso corporal pregressos e atuais entre graduados e mestres em educação física. Rev Bras Ciênc Esporte. 2000; 2(3):30-5.
5. Young DR, Aickin M, Brantley P, Elmer PJ, Harsha DW, King AC, et al. Physical activity, cardiorespiratory fitness, and their relationship to cardiovascular risk factor in African Americans and non-African Americans with above-optimal blood pressure. J Community Health. 2005; 30(2):107-24
6. Madureira AS, Corseuil HX, Pelegrini A, Petroski EL. Associação entre estágios de mudança de comportamento relacionados à atividade física e estado nutricional em universitários. Cad Saúde Pública. 2009; 25(10):2139-146.
7. Sallis JF, Owen N. Physical activity and behavioral medicine. London: Sage; 1999.
8. Douglas F, Van Teijlingen E, Torrance N, Fearn P, Kerr A, Meloni S. Promoting physical activity in primary care settings health visitors and practice nurses' views and experiences. J Adv Nurs. 2006; 55(2):159-8.
9. Harrison RA, McElduff P, Edwards R. Planning to win: health and lifestyles associated with physical activity amongst 15,423 adults. Public Health. 2006; 120(3):206-12.
10. Lankenau B, Solari A, Pratt M. International physical activity policy development: a commentary. Public Health. 2004; 119(3):352-5.
11. Guedes DP, Grondim LMV. Percepção de hábitos saudáveis por adolescentes: associação com indicadores alimentares, prática de atividade física e controle de peso corporal. Rev Bras Cienc Esporte. 2002; 24(1):23-45.

12. Silva DAS, Quadros TMB, Gordia AP, Petroski EL. Associação do sobrepeso com variáveis sócio-demográficas e estilo de vida em universitários. Ciênc saúde coletiva. 2011; 16(11): 4473-9.
13. Souza GS, Duarte MF. Estágios de de mudança de comportamento relacionados à atividade física em adolescentes. Rev Bras Med Esporte. 2005; 11(2):104-8.
14. Marcus BH, Rossi JS, Selby VC, Niaura RS, Abrams DB. The stages and processes of exercise adoption and maintenance in a worksite sample. Health Psychol. 1992; 11(6):386-95.
15. Fleck MPA, Louzada S, Xavier M, Chachamovich E, Vieira G, Santos L, et al. Aplicação da versão em português do instrumento abreviado de avaliação da qualidade de vida "WHOQOL-bref". Rev Saúde Públ. 2000; 34(2):178-83.
16. Santos JDA, Santos SAG, Santos PGMD, Wanderley AL, Batista, GR. Qualidade de vida dos professores de academia de ginástica da cidade de Olinda-Pernambuco. Rev Educ Fís. 2013; 24(2):225-31.
17. Guedes DP, Lopes CC, Guedes JERP. Reprodutibilidade e validade do questionário internacional de atividade física em adolescentes. Rev Bras Med Esporte. 2005; 11(2) 151-8.
18. Matsudo SMM, Matsudo VKR, Barros TL. Atividade física e envelhecimento: aspectos epidemiológicos. Rev Bras Med Esporte. 2001; 7(1):2-13.
19. Fillipas S, Cicuttini F, Holland AE, Cherry CL. The international physical activity questionnaire overestimates moderate and vigorous physical activity in HIV-Infected individuals compared with accelerometry. J Assoc Nurses Aids Care, 2010; 21(2):173-81.
20. Marcondelli P, Costa THM, Schmitz BAS. Nível de atividade física e hábitos alimentares de universitários do 3o ao 5º semestres da área da saúde. Rev Nutr. 2008; 21(1):39-47.
21. Cieslak F, Levandoski G, Goes SM, Santos TK, Junior GVB, Leite N. Relação do nível de qualidade de vida e atividade física em acadêmicos de educação física. Fit Perf J. 2007; 6(6): 357-61.
22. Souza -LA, Inês LL, Paiva TA, Melo JG, Rechenchosky L. Qualidade de vida de acadêmicos de Educação Física: ingressantes e concluintes. Coleç Pesqui Educ Fís. 2012; 11(5):129-36.
23. Cieslak F, Grande AJ, Levandoski G, Gordia AP, Quadros TMB, Vilela GB, et. al. Comparativo da qualidade de vida de acadêmicos de Educação Física de Campinas – SP e Ponta Grossa – PR. Rev Bras Qual Vida. 2011; 3(1):53-7.
24. Oliveira JAC. Qualidade de vida e desempenho acadêmico de graduandos [tese de doutorado]. Campinas: Universidade Estadual de Campinas; 2006.
25. Benedetti TB, Petroski EL, Gonçalves LT. Exercícios físicos, autoimagem e autoestima em idosos asilados. Rev Bras Cineantropom Desempenho Hum. 2003; 5(2):69-74.
26. Alves JGB, Tenório M, Anjos AG, Figueroa JN. Qualidade de vida em estudantes de medicina no início e final do curso: avaliação pelo Whoqol-bref. Rev Bras Educ Med. 2010; 1(34):91-6.
27. Eurich RB, Kluthcovsky ACGC. Avaliação da qualidade de vida de acadêmicos de graduação em Enfermagem do primeiro e quarto anos: influência das variáveis sociodemográficas. Rev Psiquiatr Rio Gr Sul. 2008; 30(3):211-20.
28. Silva JVP, Nunez PRM. Qualidade de vida, perfil demográfico e profissional de professores de educação física. Pensar a Prática. 2009; 12(2):1-11.
29. Augusto D, Silva S, Magalhães I, Pereira M. Estágios de mudança de comportamento para atividade física e fatores associados em acadêmicos de educação física. Rev bras ativ fís saúde. 2010; 15(1): 15-20.
30. Silva GSF, Bergamaschine R, Rosa M, Melo C, Miranda R, Bara Filho M. Avaliação do nível de atividade física de estudantes de graduação das áreas saúde/biológia. Rev Bras Med Esporte. 2007;13(1):39-42.

ENDEREÇO PARA CORRESPONDÊNCIA
BRUNA DANIELLA DE VASCONCELOS COSTA
Rua do Rio, 139 A, Mangabeira
Recife, PE, Brasil
52110-490
Telephone: 55-81-95047010
E-mail: daniellavasccosta@hotmail.com

RECEBIDO 10/05/2015
REVISADO 19/10/2015
APROVADO 23/10/2015