Revista Brasileira de Enfermagem
REBEn

Quality of life and physical activity in intensive care professionals from middle São Francisco

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Submitted: 04-11-2014 **Approved:** 03-12-2014

ABSTRACT

Objective: the objective was to assess the level of physical activity (LPA) and the quality of life QL of the professionals who work in ICU. **Method:** this was a cross-sectional study carried out in Adult ICUs. LPA was assessed by the International Questionnarie of Physical Activity – short form (IQPA-SF) and the QL by the Medical Outcomes Study 36 (SF-36) questionnaire. **Results:** it was classified active 50.89% out of a total of 59 professionals. Nursing technicians were considered the most active with 60.6%. The QL of the professionals who were considered active were better when compared to inactives, with statistical differences to the category of physical aspects limitation, social aspects and mental health. The working hours were higher than recommend, the physicians were higher than the physical therapist, nurses and technicians nurses ($p = 0.046$). **Conclusion:** physically active professionals who work in ICU had higher quality of life probably why have lower hours of work and consequently more free time to engage in physical activity.

Key words: Phisycal Activity; Burnout Professional; Humanization of Hospital Services; Quality of Life; Sedentary Lifestyle; Intensive Care Unit.

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INTRODUCTION

The Intensive Care Unit (ICU) is a hospital sectors with particular characteristics such as working indoors, the constant contact with suffering, pain and death, and a permanent state of alertness[1-2]. Many times, these characteristics can present factors or circumstances that affect the health and quality of life (QOL) of professionals working in these environments[3-9].

Quality of life is a term that has been explored in several studies with a wide range of concepts. Hence, it relates to various aspects of human life such as health, family, social relationships, work, stable financial condition, environment, among others[7,10-11].

People seek different paths to reach the QOL, including those working in ICUs. However, these professionals undergo alcohol use, smoking, poor diet and extensive working hours in a very unhealthy environment, often having to work in multiple jobs to meet their wage needs, overcoming their workload and consequently having less time for leisure and family life, which ends up distancing them from their goals[10-12]. Work has a direct relationship with QOL because it is where workers spend most of their lives, having an impact on their well-being even in their times off work[10-13].

Along with other factors, physical activity (PA) is defended as an important element in promoting health and QOL of the population[14-19]. There are many benefits, whether physical or mental, such as reduction in the levels of anxiety, depression and anger[14-19]. Researches have given special attention to analysis of the physical activity level (PAL) in different populations[14-19]. However, little has been studied about physical activity and the quality of life of different professionals working in intensive care units.

Although these health professionals know the benefits of PA, they are not able to adhere to an effective program due to lack of time or incentive[16,20-23]. Many still exchange their leisure time for work, leaving physical exercise practice in the background and becoming sedentary people.

Physically active people show greater vigor and willingness to perform their daily and professional activities, besides demonstrating less fatigue and improved cognitive level. PA also helps to improve interpersonal relationships such as those with family and socially at work, thus, improving the quality of life[16-19]. This study aimed to evaluate the PAL and the QOL of professionals working in ICUs in the cities of Petrolina and Juazeiro located in the region of the sub-middle São Francisco.

METHODS

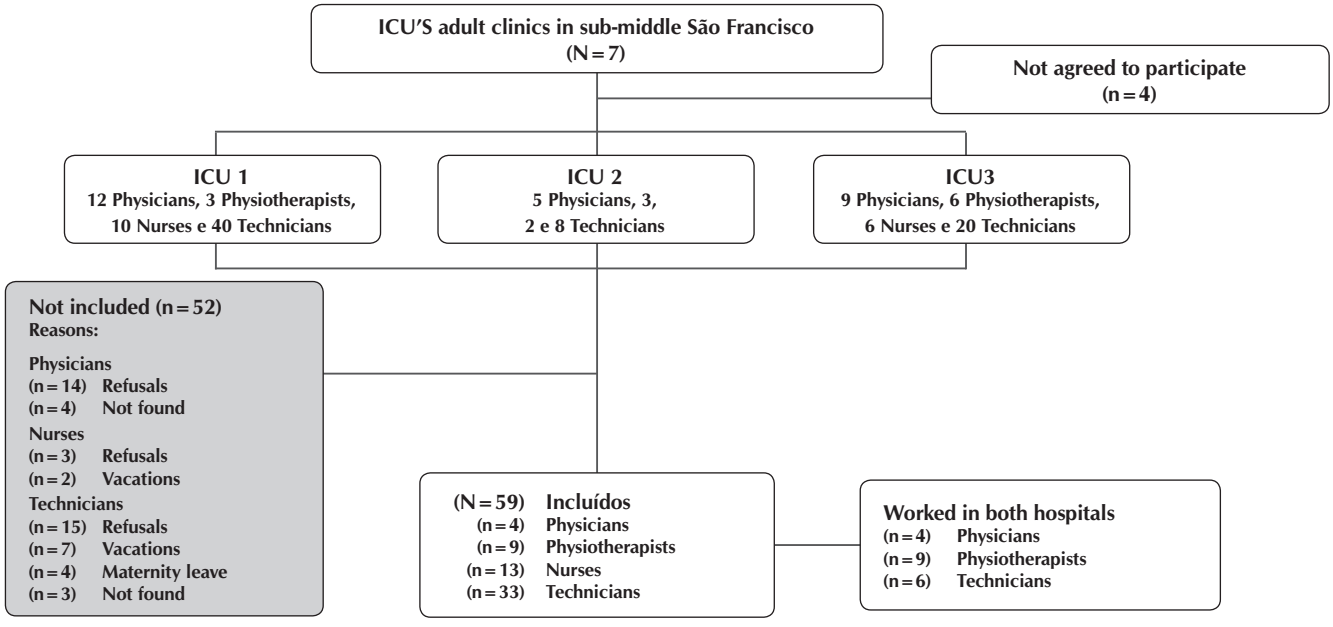
This was a descriptive cross-sectional study, carried out in some adult ICUs clinics in the cities of Petrolina and Juazeiro (state of BA) from July to September 2011 and approved by the Research ethics committee in humans of the Professor Fernando Figueira Institute of Integrative Medicine – IMIP (nº 2206-11).

These two cities are located in a sub-region of the São Francisco Valley called sub-middle São Francisco, and together they have about 500,000 inhabitants[24]. This region has seven adult ICUs, of which two are philanthropic civil institutions and five private, totaling 56 beds. Four hospitals refused to participate in the research. The three hospitals included in the study have 57.14% of beds in the region.

Professionals aged above 18 years and working in the ICUs of these hospitals were included. All professionals on maternity leave, vacation or sick leave in the period of interviews and those who refused to participate, or did not sign the consent form were excluded. Figure 1 shows the research flow of the ICU.

Personal data were collected through a form with information such as name, age, gender, professional category, working hours, working time in the ICU, alcohol use, smoking, total body weight and height. The body mass index (BMI) was

Figure 1 - Flow of professionals in the study



calculated using anthropometric measurements according to the standard formula mass (kg)/height $(m)^2$. Professionals were also asked directly about their opinion in case the company offered incentive programs aimed at physical activity in general, such as exercise in the workplace and going to work by bicycle.

The International Physical Activity Questionnaire (IPAQ) in its short version, translated and validated in Brazil was used to assess the level of physical activity[25]. The questions are related to the time the respondent spent doing physical activity in the previous week. The analysis of results is done according to the criteria of frequency and duration. The population was classified into five categories, namely: very active (practicing vigorous PA ≥ 5 days/week and ≥ 30 minutes per session; or vigorous ≥ 3 days/week and ≥ 20 minutes per session + moderate and/or walking ≥ 5 days/week and ≥ 30 minutes per session); active (practicing vigorous PA ≥ 3 days/week and ≥ 20 minutes per session; or moderate or walking ≥ 5 days/week and ≥ 30 minutes per session; or any grouped activity ≥ 5 days/week and 150 minutes/week (walking + moderate + vigorous); irregularly active, which was divided into irregularly active A (those practicing PA 5 days/week or with duration of 150 minutes per week), and irregularly active B (those who did not meet any of the recommended criteria regarding frequency nor duration); or sedentary (those who did not perform any physical activity for at least 10 continuous minutes during the week). The individuals considered active in this study were those classified as very active and active. The inactive individuals were those irregularly active and sedentary.

The quality of life was assessed using the questionnaire of QOL – *Short Form Health Survey* – SF-36, translated and validated in Brazil[26]. This is a generic instrument for assessing QOL that includes 36 items in eight components: functional capacity, physical aspects, pain, general health, vitality, social functioning, emotional aspects and mental health. In the calculation of each component, the final score ranged from 0 to 100, where 0 is the worst and 100 is the best result for each component. The questionnaires were administered by the same previously trained investigator during the interview that lasted no longer than 30 minutes.

The Microsoft Office Excel 2007 and the GraphPad Prism 4 were used for statistical analysis. The Kolmogorov-Smirnov test was applied to test the normality assumption. The chi-square test, Fisher's exact test, and the chi-square test with Yates correction when appropriate were used to evaluate the differences between proportions. The comparison between the means was performed using the t-test and One-way ANOVA for parametric variables and the Kruskal-Wallis test, the Dunn's post-test and the Mann-Whitney test for nonparametric variables. All conclusions were based on a significance level of 5%.

RESULTS

In total, 59 professionals were interviewed, of which four physicians, nine physiotherapists, 13 nurses and 33 nursing technicians. Table 1 shows that physicians had longer working hours when compared to physiotherapists, nurses and nursing technicians (p = 0.04).

Among the studied population, 50.85% were considered as active. The nursing technicians presented themselves as those who most practiced physical activity, followed by physiotherapists, nurses and physicians. None of the professionals were smokers and nurses were the greatest users of alcoholic beverages. Females were more prevalent among nursing technicians when compared to physiotherapists, nurses and physicians (Table 1).

Table 1 - Age, body mass index (BMI) and working hours of the health professionals of ICU, Petrolina and Juazeiro-BA, July-September 2011

Variables	Physician	Fisioterapeuta (n = 9)	Enfermeiro (n = 13)	Técnico (n = 33)	Valor de p*
Age (years)	33.5 ± 5.5	28.9 ± 3.7	29.9 ± 4.8	31.6 ± 6.4	0.41
BMI (Kg/m2)	26.7 ± 1.4	23.3 ± 3.9	27.2 ± 6.5	24.1 ± 3.7	0.11
Working hours (h)	80.5 ± 12.6a	65.3 ± 18.6b	66.9 ± 22b	56.0 ± 19.0b	0.04
Gender, n(%)					
Female	2 (50.0)	7(77.8)	10(76.9)	33(100)	< 0.001
Male	2 (50.0)	2(22.2)	3(23.1)	0(0)	
Physical activities, n(%)					
Active	1 (25.0)	4 (44.0)	5 (38.5)	20 (60.6)	0.35
Inactive	3 (75.0)	5(55.6)	8 (61.5)	13 (39.4)	
Smoking, n(%)					
Yes	0(0)	0(0)	0(0)	0(0)	-
No	4(100)	9(100)	13(100)	33(100)	
Alcohol use, n(%)					
Yes	0(0)	3(33.3)	6(46.2)	9(27.3)	0.32
No	4(100)	6(66.7)	7(53.8)	24(72.7)	

BMI = Body mass index; Technician = nursing technician. The variables are expressed as mean ± standard deviation and absolute and relative frequencies.
**P values obtained from* Oneway *ANOVA, chi-square and Fisher's exact tests.*
***Different letters mean statistical differences in the Tukey post-test.*

There was no statistical difference among professions in the scores regarding the eight studied domains of the SF-36 questionnaire. Table 2 shows data on age, BMI, working hours and QOL of professionals characterized as active and inactive. Individuals considered active had shorter working hours (56.4 ± 20.9 hours *versus* 66.8 ± 18.1 hours; p = 0.04) and higher scores in all SF-36 domains, with statistical difference in domains of limitation by physical aspects (89.3 ± 23.3 *versus* 73.3 ± 33.4; p = 0.01), social functioning (86.2 ± 15.9 *versus* 75.7 ± 20.2; p = 0.03) and mental health (85.0 ± 11.9 *versus* 76.8 ± 14.3; p = 0.02), when compared to inactive individuals.

When asked about using a bicycle as a means of transportation to work and an alternative to physical activity practice, 45 (76.27%) of professionals responded affirmatively. Regarding activity in the workplace, 58 (98.3%) were in favor (data not shown in tables).

Table 2 - Age, body mass index (BMI), working hours, and domain of the SF-36 quality of life questionnaire according to the level of physical activity of the professionals evaluated

Variables	Level of physical activity		P value
	Active (n = 30)	Inactive (n = 29)	
Age (years)	32.2±6.0	29.7±5.2	0.98
BMI (Kg/m2)	24.9±3.8	24.8±5.2	0.54
Working hours	56.4±20.9	66.8±18.1	**0.04**
Functional capacity	83.2±17.3	81.7±16.8	0.74
Physical aspects	89.3±23.3	73.3±33.4	**0.01**
Pain	69.5±23.8	68.3±21.9	0.84
General health	83.2±14.3	76.0±19.4	0.11
Vitality	70.3±13.1	65.7±19.1	0.28
Social functioning	86.2±15.9	75.7±20.2	**0.03**
Emotional aspects	84.4±28.7	81.6±32.8	0.66
Mental health	85.0±11.9	76.8±14.3	**0.02**

Notes:

The variables are expressed as mean ± standard deviation. P values obtained from the t test for independent samples and from the Mann-Whitney test for the items of limitation by physical aspects and emotional aspect.

DISCUSSION

Although the study sample is composed of health professionals that know the benefits of PA practice, a high proportion of inactive individuals was found (49.15%), which was associated with quality of life and working hours. In addition, health professionals of the ICUs in the sub-middle San Francisco region work more hours than the maximum limit of 44 hours per week established by the Consolidation of Labor Laws (CLT - Consolidação das Leis do Trabalho)[27].

It is a consensus that the practice of PA is directly related to health promotion and the prevention of chronic noncommunicable diseases (NCDs) such as heart disease, cancer, hypertension, diabetes mellitus and obesity[14-23]. The stressful routine in the ICU environment, where professionals work in a state of constant attention, living with suffering, pain and death, associated with working hours that often exceed labor laws regulations, low wages and lack of exercise can directly affect the health of these individuals, consequently affecting their QOL[3,6-7]. The ICU is perceived by staff, patients and families as one of the most aggressive and traumatic environments in the hospital[3-4,6-9].

Much of these professionals' lives is spent in these hospital settings, mainly due to the long working hours. Studies, especially in the nursing area, have shown that QOL is associated with the conditions offered in these locations[4,6-9,12-13] and, when coupled with a sedentary lifestyle, it can influence the health-disease process. A sedentary lifestyle, along with smoking and bad eating habits are risk factors for the development or worsening of NCDs[14-23]. All professionals in this study had an average of over 55 hours per week.

The quality of life of the professionals evaluated was considered acceptable when compared with the nursing staff in the operating room from another hospital, who had a score of around 100 in the eight domains of the SF-36, suggesting a good state of health and QOL[28].

The analyzed professionals had a weekly workload far above the 44 hours allowed by law[27]. Physicians had the longest work hours (80.5 ± 12.6 hours) compared to nursing technicians (56.0 ± 19.0), physiotherapists (65.3 ± 18.6) and nurses (66.9 ± 22). A possible explanation for this finding is that nursing technicians working in a single job already have a weekly workload of more or less 48 hours, so they are able to have a maximum of two other jobs. As physicians in the area have a contract of up to 12 hours, they can work in more than a job, or even increase their shift hours in the same job and thereby, increase their working hours. Another important issue was that about 61% of participants had more than a job, which is considered one of the physical and psychological stress factors for workers in the health area[9,12].

The results of this study have shown that volunteers considered as active had better scores on the SF-36 domains when compared to the inactive, as well as lower working hours. The fact that physically active professionals have shorter working hours may have contributed to having more free time to practice physical activities and consequently, present a better quality of life. The ratio between active and inactive in this research was 50.85% versus 49.15%, similar to the results found by other authors (50.6% of active and 49.4% of inactive) who also used the IPAQ to evaluate the

PAL among employees of a higher education institution in Bahia[29]. The data presented here differ slightly from those presented in the National Survey by Household Sample (PNAD - Pesquisa Nacional por Amostra de Domicílios), which considered about 36% of the Brazilian population as active[30].

The practice of PA brings great benefits to the daily and professional activities of people, such as cognitive improvement, tackling stress, anxiety and depression, improvement of interpersonal relationships, as well as more energy and less fatigue throughout the working life[10-11,17,21-23]. When professionals were directly asked about the implementation of PA practice incentive programs, such as going to work by bicycle, 76.27% were in favor and 23.73% against, justifying the negative answer by distance, weather of the region or transportation to another job. Regarding exercise in the workplace, 98.3% were in favor and 1.7% against.

A possible limitation of this study may be related to the duration of interviews. Since the studied population has a frantic service routine without free time, it was difficult to administer questionnaires, which was done in the few minutes available, sometimes interrupted and restarted in opportune moments. Another fact that called attention was the low participation mainly of physicians. This can be explained by the greater number of refusals of physicians to participate, and because of their employment engagements in one, two or even in the three hospitals involved in the study.

This was the first research aiming to trace the physical profile and assess the QOL of health professionals working in ICUs of the sub-middle São Francisco, a region in broad development in the sector of health service provision. Hence, it was possible to draw a diagnosis of the level of physical activity and quality of life of these professionals, pointing out that interventions to the health of this population are needed, especially with regard to physical inactivity and long working hours. Studies establishing cause and effect relations are necessary to identify possible determinants of inactivity in this population, and also to evaluate the benefits of incentive programs to PA practice, both for professionals as for health institutions.

CONCLUSION

The health professionals working in the ICUs of the São Francisco sub-middle region and classified as active have better QOL and shorter working hours compared to the inactive professionals.

ACKNOWLEDGEMENTS

We thank all the professionals and coordinators of the Emergency and Trauma Hospital of Petrolina, General and Emergency Hospital and the Regional Hospital of Juazeiro, who kindly participated and contributed to the research.

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