

Assessment of the Stress Level of Anesthesiologists of the Sergipe Anesthesiologists Cooperative

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Summary: Andrade ANM, Albuquerque MAC, Andrade ANM – Assessment of the Stress Level of Anesthesiologists of the Sergipe Anesthesiologists Cooperative.

Background and objectives: To assess the impact caused by stress on occupational health of anesthesiologists in Sergipe and to propose solutions to improve work conditions, quality of the service provided, and quality of life.

Methods: WHOQOL-BREF questionnaire was applied; the sample size was determined by the Barbeta method; and Student *t* test and Analysis of Variance were used for intergroup comparisons, considering significant a $p < 5\%$.

Results: This study demonstrated that the mean weekly working hours is 61.33 hours. In the subjective analysis of quality of life, 53.1% of the respondents had a negative or non-established evaluation. On the item "leisure activities", 61.2% answered they have very few opportunities or none at all, demonstrating agreement with personal satisfaction and working assessment. The age group of 41 to 52 years old had the best scores. A significant difference regarding gender and number of working days/week was not observed. The general domain had lower scores than the others in all variables analyzed.

Conclusions: Excessive working load contributed to a negative self-evaluation on quality of life, besides hindering access to leisure activities. The implementation of a quality policy in work institutions, as well as a personal reevaluation in search of innovation, professional recycling, leisure alternatives, and motivation are factors that can contribute to improve the quality of life and work of these professionals.

Keywords: Anesthesiology; Quality of Life; Stress, Psychology; Occupational Health.

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INTRODUCTION

Due to personal and collective needs, occupational health is constantly being discussed. In view of the repercussions caused by stress not only in the professional life of an individual but also in personal and social life, society has been recognizing its importance ^{1,2}.

With anesthesiologists the situation is the same, since stress is unavoidable, and it becomes harmful when one cannot control it resulting in physical and psychosocial problems ³.

In the eyes of the population, health care professionals are protected from these problems by the institution they work at, by their colleagues, and by the financial return ⁴.

However, direct and indirect evidence that this conception is unrealistic do exist, since Anesthesiology is an area identified as being extremely stressful ⁵, which has been demonstrated in several studies ⁵.

We evaluated the level of stress of anesthesiologists of the Sergipe Anesthesiologists Cooperative, relating quality of life and the degree of satisfaction with ones' health, the number of weekly workdays and shifts, gender, and age group.

This study assessed the impact of stress on their personal and professional life, proposing solutions to improve working conditions, quality of service provided, and quality of life.

METHODS

An exploratory, descriptive, transversal study was undertaken without identifying the volunteers, using a standardized questionnaire.

Respondents are anesthesiologists of the State of Sergipe Anesthesiologists Cooperative, and the study was carried out in their work environment as follows: the investigator visited the operating room of the following hospitals – Hospital de Urgência de Sergipe, Maternidade Santa Isabel, Maternidade Nossa Senhora de Lourdes, Fundação Beneficente Hospital de Cirurgia, Hospital Universitário, Hospital São Lucas, and Hospital Primavera – and the focus of the investigation was presented. Those interested in participating answered the questionnaire that was divided into two parts: the first one,

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with general personal data such as age, gender, working shift, and number of weekly working days; and the second that contained the quality of life evaluation through a questionnaire developed by the Quality of Life Group of the World Health Organization, the abbreviated version of the World Health Organization Quality of Life (WHOQOLBREF) with 26 questions and scores graded from 1 to 5 points⁶.

This questionnaire contains two general questions on quality of life and the degree of satisfaction with one's health, while the remaining 24 involve physical and psychological aspects, social relationships, and environment. With this questionnaire it is possible to subjectively assess the degree of satisfaction of the respondent with his/her working capacity, physical appearance, access to information, leisure, sex life, financial status, working and health services conditions, general social relationships, work safety, and housing⁶.

The guidelines of the Quality of Life Group of the World Health Organization regarding the questionnaire scores were followed. The Barbetta method was used to define the sample size.

The study population was composed of 104 anesthesiologists, and the tolerable error considered was 5%. We obtained a study sample of 49 anesthesiologists.

The Student *t* test and Analysis of Variance (ANOVA) were used in the intergroup comparisons, considering a level of significance of 5%. The objective of the Student *t* test is to compare means between two groups or samples, independently or paired, assuming the homogeneity of variances, while ANOVA has the same objective, but in case of more than two groups.

The SPSS 17.0 (Statistical Package for the Social Science) was used in the analysis, and data were expressed as percentage, and mean and standard deviation.

Physicians who refused to participate, professionals that could not be found, and the authors were excluded from the study.

Before answering the questionnaire, all participants signed an informed consent.

RESULTS

Forty-nine anesthesiologists from the Sergipe Anesthesiologists Cooperative, representing 45.79% of the total, participated in the study. The mean time of employment was 15.04 years, ranging from 3 to 38 years, and mean weekly hours worked was 61.33, ranging from 35 to 90 hours (Table I).

Thirty-one were males (63.3%) and 18 females (36.7%) (Table II). A predominance of the age range between 29 and 40 years, representing 46.9% of the sample, followed by 41 and 52 years (36.7%), and over 52 years (16.3%), was observed (Table II). Participants' age ranged from 29 to 65 years with a mean of 42.2 years (Table III).

Table I – Time of Employment (years) and Mean Weekly Working Hours

	Time of employment	Weekly working hours
Mean	15.04	61.33
Standard Deviation	09.30	14.37
Minimal	03	35
Maximal	38	90

Number of anesthesiologists: 49.

Table II – Distribution of Anesthesiologists

	N = 49	%
Distribution of anesthesiologists by gender		
Male	31	63.3
Female	18	36.7
Distribution by age range (years).		
29-40	23	46.9
41-52	18	36.7
> 52 years	08	16.3
Working shift		
Morning	37	75.5
Evening	09	18.4
Night	03	6.1
Working shift per gender		
Morning (M / F)	22/15	71/83.3
Evening (M / F)	06/03	19.4/16.7
Night (M / F)	03 /00	9.7/ -
How do you evaluate your quality of life?		
Very bad	01	2.0
Bad	09	18.4
Neither good nor bad	16	32.7
Good	20	40.8
Very good	03	6.1
How much do you enjoy life?		
Very little	11	22.4
A moderate amount	19	38.8
Very much	19	38.8
How satisfied are you with your personal relationships (friends and relatives)?		
Very dissatisfied	01	2.0
Dissatisfied	05	10.2
Neither satisfied nor dissatisfied	14	28.6
Satisfied	25	51.0
Very satisfied	04	8.2
Do you have enough energy for everyday life?		
Very little	01	2.0
Moderately	30	61.2
Mostly	16	32.7
Completely	02	4.1
To what extent do you have the opportunity for leisure activities?		
Not at all	01	2.0
Very little	14	28.6
Moderately	15	30.6
Mostly	16	32.7
Completely	03	6.1

The morning shift predominated (75.5%), followed by the evening shift (18.4%) and nocturnal (6.1%) (Table II).

Among women, 15 work more often in the morning (83.3%) and 3 in the evening (16.7%). Of the women interviewed, none of them work in the nocturnal shift, and among males 3 had a larger working load at night (9.7%), but the morning shift also predominated with 71%, followed by the evening with 19.4% (Table II).

When quality of life was subjectively evaluated (general domain), 6.1% answered very good, 40.8% good, 32.7% neither good nor bad, 18.4% bad and very bad 2% (Table II). Regarding how much they enjoy life (psychological domain), 19 answered very much (38.8%); 19 more or less (38.8%); and 11 very little (22.4%) (Table II).

When they were assessed regarding the degree of satisfaction with their personal relationships (social domain), 51% stated they were satisfied; 5 (10.2%) were dissatisfied; and one (2%) was very dissatisfied (Table II). Regarding whether they have enough energy for their daily life (physical domain), 61.2% answered moderately, and only 2% said very little (Table II).

Regarding leisure activities (environmental domain), 28.6% answered they have very little leisure opportunities.

When the scores per gender were compared with Student *t* test, a statistically significant difference was not observed in any of the gender-related domains, with a *p* higher than 5%. Although the absolute value of the psychological and physical domains was higher among males; among females it was higher in the social, environmental, and general domains (Table IV).

When comparing the scores per domain among the different age groups, we noticed that the age group between 41-52 years had higher scores when compared to other age groups in all domains (Table V).

Analyzing mean scores according to the length of employment in relation to weekly hours worked, it was observed that professionals with 15 to 26 years of occupation had lower scores (56.32) when compared to those with more than 26 years (69) and those with less than 15 years (63.13) (Table VI).

Among the interviewees, a relative variation was observed regarding the number of days worked per week, with a minimum of four and a maximum of seven days per week. When the scores of the questionnaire were analyzed it was observed that the differences were not statistically significant (Table VII).

Table III – Descriptive Statistics of Age (years)

#	Minimal	Maximal	Mean	Standard Deviation
49	29	65	42.20	9.732

Table IV – Comparison of Domain Scores by Student *t* test

	Male (n = 31)	Female (n = 18)	<i>p</i>
Physical	70.39 ± 13.50	70.04 ± 14.71	0.932
Psychological	67.34 ± 12.96	65.51 ± 15.84	0.663
Social relationships	65.59 ± 14.71	65.74 ± 17.82	0.975
Environment	63.71 ± 17.63	63.89 ± 15.87	0.972
General	58.47 ± 19.20	59.72 ± 21.67	0.834

Data expressed as mean ± standard deviation.

Table V – Comparison of Domain Scores by Age Group (years)

	29-40 (n = 23)	41-52 (n = 18)	> 52 (n = 8)	Total (n = 49)	<i>p</i>
Physical	68.94 ± 15.81	75.60 ± 10.19	62.05 ± 10.62	70.26 ± 13.80	0.054
Psychological	64.67 ± 17.17	69.21 ± 10.32	66.67 ± 10.91	66.67 ± 13.95	0.596
Social relationships	65.94 ± 17.57	68.98 ± 12.40	57.29 ± 15.71	65.65 ± 15.71	0.219
Environment	62.91 ± 16.60	68.06 ± 12.89	56.64 ± 23.82	63.77 ± 16.84	0.269
General	55.98 ± 18.79	65.97 ± 18.09	51.56 ± 24.49	58.93 ± 19.93	0.146

Data expressed as mean ± standard deviation.

Table VI – Comparison of Mean Weekly Hours Worked According to Time of Employment

Time of employment	#	Mean	Standard deviation	Minimal	Maximal
3-14 years	23	63.13	15.24	40	90
15-26 years	19	56.32	10.29	40	72
> 26 years	07	69.00	17.90	35	90
Total	49	61.33	14.37	35	90

Table VII – Comparison of Domain Scores by Weekly Working Days

	4 to 5 days (n = 21)	6 to 7 days (n = 28)	<i>p</i>
Physical	67.86 ± 12.63	72.07 ± 14.58	0.296
Psychological	66.07 ± 14.21	67.11 ± 14.00	0.799
Social relationships	65.08 ± 15.73	66.07 ± 16.03	0.830
Environment	63.69 ± 14.10	63.84 ± 18.89	0.976
General	59.52 ± 18.50	58.48 ± 21.26	0.976

Data expressed as mean ± standard deviation.

DISCUSSION

This study was carried out with 45.79% of the anesthesiologists of the Sergipe Anesthesiologists Cooperative, a significant percentage when compared to similar studies ⁵.

The mean weekly workload of the anesthesiologists in Sergipe is 61.33 hours, considered elevated when compared to other professions, but lower than that observed in other places in the same field. In a study published in 2004 titled "The night shift in Anesthesiology reduces sleep latency", it was observed that the mean workload was 72 hours ⁷. It is also interesting that over the years the mean number of working hours did not decrease, which deserves a deeper analysis explaining the motivating factors for remaining at work with elevated working hours.

On the subjective analysis of quality of life, 53.1% of interviewees had a negative or undefined assessment, a higher percentage than a similar study undertaken in Recife, where 44.6% had the same perception ⁵, and than a study performed amongst Uruguayan physicians ⁸, which indicates the need of a more detailed study to attest such degree of dissatisfaction.

Regarding how much they enjoy life, 61.2% answered a moderate amount or very little, also considered a high score that reflects psychological dissatisfaction, corroborating the previous data.

We observed that among respondents, 63.2% considered that they have moderate or very little energy for everyday life.

On the item leisure activities, 61.2% of anesthesiologists answered a moderate amount, or very little or no opportunity at all, revealing that they have a high level of demand and that overwork limits performance of other activities considered essential for physical and mental health. They are also dissatisfied with their personal relationships (friends and relatives), and 40.8% answered dissatisfied, very dissatisfied, or indifferent.

After data analysis, we observed that being an Anesthesiologist in the State of Sergipe is very stressful, disrupting several aspects of life, causing not only physical and psychological changes, but also in personal and environmental relationships. We propose a reevaluation of all professionals in this field to review working conditions and wages, which are the causative factors of professional dissatisfaction resulting in consequences in physical and psychoemotional health.

Other studies reported similar problems regarding anesthesiologists. Studies on their personalities observed that they are more reserved, serious, intelligent, assertive, self-sufficient, and uptight when compared to physicians in other specialties ⁹.

Their specialty gives them the impression that they do not need the cooperation of other physicians. Because they work alone, they feel they have stability and independence, therefore, they have difficulties in trusting their colleagues fearing the patient will develop severe sequelae, which leads them to trust only their own performance generating psychological and emotional overload, being responsible for the high rate of drug addiction and suicide among these professionals ³.

The creation of a commission to evaluate working conditions in the hospitals in the State of Sergipe is of capital importance. This commission should be independent and have the support of public and private sectors to put into practice in all hospitals and clinics where anesthesia is performed the Resolution # 1,802/06 of the Federal Medical Board, to improve working conditions. In parallel, the Society of Anesthesiologists of the State of Sergipe can elaborate a proposal to improve the working health of these professionals, searching for subsidies to perform, along with the Anesthesiologists Cooperative, periodical evaluations of these professionals, directly interfering on the insertion of anesthesiologists in the labor force. Additionally, they also should try to improve network services and guidance on working conditions, as well as evaluate the workload and other factors that interfere with the practice of anesthesiology.

We conclude that the results of this study reflect the difficult time of insertion of physicians into the labor market, associated with cultural factors that impose an increased workload to maintain the *status quo* and financial gains. This result is similar to that of other studies, indicating the need to take individual and collective attitudes to attenuate and/or improve the health and satisfaction of these professionals. The recognition and diagnosis of the problem makes us reflect that something must be done so we can continue to practice medicine with dignity, taking care of our patients the best way possible, while remaining healthy for professional practice with quality in our daily life.

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Resumen: Andrade ANM, Albuquerque MAC, Andrade ANM – Evaluación del Nivel de Estrés del Anestesiólogo de la Cooperativa de Anestesiología de Sergipe.

Justificativa y objetivos: Evaluar el impacto que el estrés genera en la salud ocupacional de los anestesiólogos de Sergipe, y proponer soluciones para la mejoría de las condiciones de trabajo, calidad del servicio realizado y calidad de vida.

Método: Se aplicó el cuestionario WHOQOL-BREF, la definición del tamaño de la muestra por el método de Barbeta, y las comparacio-

nes entre grupos por los test *t* Student y Análisis de Varianza. Se consideraron significativos los valores de $p < 5\%$.

Resultados: La investigación demostró que la carga horaria promedio semanal de trabajo es de 61,33 horas. En el análisis subjetivo sobre la calidad de vida, un 53,1% de los entrevistados obtuvieron una evaluación negativa o esa evaluación no se estableció. En el aspecto del ocio, un 61,2% respondieron que tienen poca o ninguna oportunidad, demostrando estar a tono con la evaluación de la satisfacción personal y de trabajo. El rango etario entre 41 y 52 años fue el que presentó mejores puntuaciones. No hubo diferencia significativa con relación al género y a los días de trabajo semanales. El dominio general presentó puntuaciones inferiores a los demás en todas las variables analizadas.

Conclusiones: La carga horaria excesiva aportó una autoevaluación negativa sobre la calidad de vida, además de dificultar el acceso al ocio. La implementación de una política de calidad en las instituciones de trabajo, como también una nueva evaluación personal buscando la innovación, el reciclaje profesional, las alternativas de ocio, y la motivación, son factores que podrán aportar una mejoría de la calidad de vida y de trabajo de esos profesionales.

Descriptores: ANESTESIOLOGÍA; Organización; ANESTESIOLOGOS.