

# Perception of Quality of Life among Anesthesiologists and Non-Anesthesiologists

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**Summary:** Arenson-Pandikow HM, Oliviera LT, Bortolozzo CR, Petry S, Schuch TF – Perception of Quality of Life Among Anesthesiologists and Non-Anesthesiologists.

**Background and objectives:** Literature points out routine factors with negative impact on anesthesiologists' quality of life. This study aims to compare the perception of quality of life of anesthesiologists and non-anesthesiologists.

**Method:** Transversal study based on three specific questionnaires (epidemiological, WHOQOL-BREF and SF-12®) applied in anesthesiologists (Group A) and non-anesthesiologists (Group NA), of a general university hospital and a third group of anesthesiologists from inner state (Group I). The analysis of epidemiological variables and the ones related to quality of life domains of WHOQOL were interpreted by multivariate analysis (SPSS program).

**Results:** The number of WHOQOL-BREF respondents were: Group A = 67; Group NA = 69; Group I = 53. The anesthesiologists from Group I were excluded from the study due to an inadequate sample for statistical analysis. The total number of respondents to check the SF-12® score was 61 in Group A and 68 in Group NA. For the WHOQOL-BREF tool, the physical domain scores were  $72.97 \pm 11.78$  for Group A and  $77.17 \pm 10.85$  for Group NA ( $p < 0.05$ ); the psychological domain scores were  $66.44 \pm 13.66$  for Group A and  $71.79 \pm 11.48$  for Group NA ( $p < 0.05$ ); the social relationship domain scores were  $64.67 \pm 19.08$  for Group A and  $73.36 \pm 15.37$  for Group NA ( $p < 0.01$ ); and the environment domain scores were  $68.14 \pm 11.56$  for Group A and  $72.37 \pm 10.07$  for Group NA ( $p < 0.05$ ). In SF-12®, both physical and mental components did not show statistical differences.

**Conclusions:** The perception of the anesthesiologists' quality of life was consistently inferior to other physicians in general, for the studied sample.

**Keywords:** Quality of Life; Anesthesia; Professional Practice; Evaluation Studies; Questionnaires; World Health Organization.

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## INTRODUCTION

A physician spends practically all the time in alert state while practicing his profession. Taking care of patients, attending meetings, unexpected work situations, the need of constant update and continued education generate a gradual and increasing overload. An oppressive sensation remains that, in fact, he/she resigned to live with less than the minimum, and created an increasing abyss between the most imperious preoccupations of both routine and familiar fields and any anxiety

about the future<sup>1</sup>. In this panorama the physician experiences loss of sleep, alteration of psycho-structure, self-esteem and professional performance, with lots of mixed feelings. On the one hand, is the pleasure to perform the profession of choice. On the other hand, the physician finds him/herself within a health system that became an engine to enable mass treatments, making him/her feel disposable; a mere spare part. The cherished autonomy became encapsulated. The physician lost his/her freedom. In this context, the anesthesiologist, due to peculiarities of his specialty, is familiar with additional stress situations, resulting from sleep privation by night calls, highly mutant work environment that incorporates noise pollution (surgical and aspiration equipment, electrocautery, monitors, alarms, ventilators, among others), radiation exposure, excessive heat or cold, uncomfortable chairs and poorly-designed operating rooms<sup>2,3</sup>. Other relevant factors are the lack of control over workload, the difficulty in communicating with staff, and the permanent subordination to the surgeons' schedule<sup>4</sup>.

In the literature, considerable contributions support the prevalence of psycho-physiological alterations connected to professional performance<sup>5-8</sup>. Such evidences require reflection and demand structural changes in the anesthetic environment. One should start by the identification of intangible

Received from Hospital das Clínicas de Porto Alegre, Brazil.

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Submitted on May 3, 2011.

Approved on August 3, 2011.

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factors, detrimental to quality of life at workplace, which are not recognized and, therefore, not duly solved.

The present study aimed to evaluate the anesthesiologists' quality of life and of a control group of non-anesthesiologist representative of the medical population of Rio Grande do Sul, for the comparative verification of the real situation of anesthesiologists in our environment.

## MATERIAL AND METHODS

### Study design

This was a transversal study to analyze the data collected from three specific forms that were anonymously applied to participants of the project from August 2007 to March 2008. The three questionnaires were: epidemiological questionnaire related to the work routine; the World Health Organization Quality of Life Group – WHOQOL-BREF and the simplified version of SF-36® (Medical Outcomes Study 36 – Item Short-Form Health Survey); SF-12®.

### Definition of groups and sample size

Group A consisted of anesthesiologists working at the Service of Anesthesia and Perioperative Medicine (SAMPE) of Hospital de Clínicas de Porto Alegre (HCPA). The Group NA consisted of physicians from different specialties, non-anesthesiologists, also working at HCPA. The sample was selected proportion-

ally to the specialties registered at the Regional Council of Medicine of Rio Grande do Sul. Group I consisted of anesthesiologists from three cities of the inner state of Rio Grande do Sul. Physicians who did not want to participate in the project or did not sign the consent form were excluded as well as those who did not fill the forms entirely and physicians who practiced their professional activities both in the capital and inner state. Considering the limit of number of physicians hired by SAMPE (70), in order to obtain  $\alpha = 0.05$  and  $\beta = 80\%$ , a sample size of 64 individuals in each group was necessary.

### Statistical analysis

Data obtained were stored in a specific database, using Excel Microsoft® spreadsheet and analyzed in SPSS (Statistical Package for Social Sciences) program to study epidemiological variables. The quality of life scores were processed by specific models of each tool used and correlations with epidemiological variables were obtained by multivariate analysis. In all analysis, two standard deviations were considered,  $< 0.05$ , as statistically significant.

## RESULTS

The results of the epidemiological questionnaire applied in the three groups are described in Table I.

Groups A and I did not differ statistically from Group NA on age, nights on duty or on call during the week or weekends and the practice of physical or leisure activities.

**Table I** – Results of Epidemiological Questionnaire Applied in Three Groups

	<b>Group NA</b> Non- anesthesiologists (n = 69)	<b>Group A</b> Anesthesiologists from the capital (n = 67)	<b>Group I</b> Anesthesiologists from the inner state (n = 53)
Male gender	56.4%	48.5%	83% p < 0.01
Graduation time	15.81 p < 0.05	12.54	15.55 p < 0.05
Hours worked daily	9.91 ± 2.79	9.32 ± 2.58	11.20 ± 1.59 p < 0.01
Time of weekly rest	1.83 ± 2.05	2.12 ± 1.34	0.97 ± 0.80 p < 0.01
Night shift in the previous 2 weeks	2.19 ± 3.12	1.68 ± 1.74	2.83 ± 1.72 p < 0.01
Hierarchy relationship at work	47.2% p < 0.01	89.7%	98.6%
<b>Relationship with staff</b>	<b>Pleasurable</b> 63.8% p < 0.01	<b>Respectful/stressful</b> 56.8%	<b>Respectful/stressful</b> 65.4%
Attendance in scientific event on previous year	94.1% p < 0.01	66.2%	58.4%
Article read in 2 previous weeks	89.1% p < 0.01	76.5%	67.9%
<b>Periods of 7 or more days off/year</b>	<b>2 periods</b> 77.6%	<b>2 periods</b> 64.1%	<b>3 or more periods</b> 88.5% p < 0.01

The total number of participants in each group to the WHOQOL-BREF score was 67 in Group A, 69 in Group NA and 51 in Group I. For the SF-12 score the number of participants was 61, 68 and 52 for the Groups A, NA and I, respectively. Since Group I did not reach the necessary n to apply the quality of life scores, this group could not be included in the analysis.

**Table II** – Total Number of Participants in Each Group for WHOQOL-BREF Score

Domains	Capital anesthesiologists (A)	Non-anesthesiologists (NA)
Physical	72.97 ± 11.78 (p < 0.05)	77.17 ± 10.85
Psychological	66.44 ± 13.66 (p < 0.05)	71.79 ± 11.48
SR	64.67 ± 19.08 (p < 0.01)	73.36 ± 15.37
Environment	68.14 ± 11.56 (p < 0.05)	72.37 ± 10.07
Overall	62.31 ± 19.15 (p < 0.01)	72.82 ± 14.05

SR: social relationships.

**Table III** – Total Number of Participants in Each Group for SF-12 Score

	Capital anesthesiologists Group A	Non-anesthesiologists Group NA
PCS*	55.24 ± 4.91	55.78 ± 4.28
MCS*	48.03 ± 10.80	51.07 ± 8.77

\*PCS: physical component summary; \*MCS: mental component summary.

**Table IV** – Multivariate Analysis: Capital Anesthesiologists vs Non-Anesthesiologists

Domains	Worst relationship with staff	Smallest time devoted to update	Smallest work experience
Physical			
Psychological	x		
Social relationships	x	x	
Environment			x
Overall	x		

Group A had significantly lower scores compared with Group NA in the WHOQOL-BREF tool (Table II) on the following domains: physical, psychological, social relationship, environment and general quality of life. But SF-12® tool scores (Table III) did not significantly differ among groups.

When the multivariate regression was performed (Table IV) to correlate epidemiological variables with altered scores of anesthesiologists' Group A, the reduced participation in scientific events was the predictor of lower scores in the environment domain. The worst relationship with staff was the predictor of lower scores on following domains: psychological, social relationships and general quality. The less time of graduation was the predictor of lower scores in the environment domain.

## DISCUSSION

Literature is full of studies that report different types of stress that anesthesiologists undergo <sup>2-8</sup>, but there is no specific study that indicates their perception of quality of life when compared with doctors in general. On the other hand, the level of anesthesiologists' satisfaction with the profession is high <sup>4,9</sup>, a fact that could soothe the hard conjuncture variables and contribute to a better perception of their quality of life. However, our data do not support this assumption. When we compared capital anesthetists with physicians in general, it was evident that their "quality of life" was inferior in many aspects of the analysis. When the same comparison was proposed with "inner state anesthetists", the size of group sample was not enough.

Factors that could interfere with the level of anesthesiologists' quality of life have already been shown in previous publications <sup>2-8</sup>. Recently, Mansour <sup>10</sup> compared a group of anesthesiologists with diabetic patients and other employees of the same hospital and demonstrated significantly higher general fatigue scores in anesthesiologists. Chia <sup>11</sup> pointed out to an inverse relationship between emotional exhaustion and professional satisfaction by analyzing data of anesthesia residents. Nyssen et al. <sup>4</sup> documented that even though the stress levels measured in were not higher than workers in general, 40% of them suffered from burnout syndrome with higher rates among young residents. In the American residency programs in anesthesia, an improvement in the residents well being was detected three years after the implementation of limit of duty hours <sup>12</sup>. Other data reinforce an increasing tendency among American and Australian anesthesiologists in reducing the weekly workload directly related to anesthesia.

In the present study, which applied the duly-validated WHOQOL-BREF tool <sup>14,15</sup>, including for groups in the work environment <sup>16</sup>, Group A had significantly inferior quality of life scores in the total analyzed domains (psychological, social relationship, environment and physical). However, when applying the SF-12® instrument no differences among groups were detected. This could be attributed to the instrument used, which is more indicated to check clinical outcomes and differentiate health states when compared with WHOQOL-BREF <sup>17</sup>. In fact, the present approach did not analyze populations with specific comorbidity neither groups with some type of limiting disease. But, regarding the choice of the simplified version of the tool (12 questions), which would abbreviate the time to fill in the three questionnaires, the sample size in HCPA was reduced to the appropriate achievement of outcomes.

With regard to Group I whose evaluation was impracticable for not having a statistically sufficient sample, we will try to extend this survey to other places in the state.

Based on the work profile from Table I, the multivariate analysis detected a positive relationship between the inferior scores of the anesthesiologists from Group A and their worse relationship with the staff. This finding strengthens the opinion by Jenkins et al. <sup>9</sup> about the significant impact of the surgeon's attitude towards the anesthesiologist and his professional satisfaction. The real importance of this component became

even more evident when we demonstrated this relationship in our study in more than one domain (psychological and social relationships) and overall. Other inferior scores related to the factor "less time devoted to update/education" in social relationships domain, indicate the importance of trips to congresses, attendance to seminars out of the work environment and discussion of articles, among others. Those are fundamental to renovate/acquire cognitive, affective and social skills. The group of Kinz et al.<sup>18</sup> defined well the relevance of social and personal relationships (more reading time, making friends, family relationships) when they showed the anesthesiologist trusts more his personal and intellectual skills to handle daily demands, overcoming even the support of colleagues or bosses. In the present study, reduced profession time showed correlation with inferior scores in the environment domain, where situations like security, quality of work environment and mobility are evaluated. A study by Morais et al.<sup>19</sup> favors these findings by confirming the high stress levels among anesthesiologists, being the longer time of professional experience correlated with smaller rates of emotional fatigue. The frequent changes in workplace would cause less stress, privilege commonly acquired only after some years.

In our search for elements connected to the quality of life in the anesthesiologist's work when compared with other physicians, in addition to the limitations attributed to the sample size, it would be appropriate to mention a peculiar characteristic when it comes to professionals linked to a school hospital, who receive more pressure from the academic environment. This condition, equally valid for the control group, may not adequately represent physicians working in non-educational institutions. However, it became clear that, in the specific case of anesthesiologists, their perception of quality of life is much lower if compared with other physicians.

## CONCLUSIONS

The perception of the anesthesiologist's quality of life was consistently inferior to other physicians for the specific sample. The outcome of this study contributes with meaningful information to guide curative actions, either individual, in groups or by the class' representative bodies about organizational, environmental and work logistics that are possibly damaging the occupational well being of the class. More research is required to assess possible differences in quality of life of anesthesiologists working in regions outside the capital.

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