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Original Article

Quality of life of orthopedists in Mato Grosso do Sul

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Objective: Evaluate QOL and its implications for health care providers specialized in orthopedics.

Methods: In this quantitative, descriptive, cross-sectional study two questionnaires, World Health Organization Quality of Life (WHOQOL-100) and sociodemographic, were sent to 117 orthopedic surgeons, with 29 doctor's response. Statistical analysis was performed using three different tests: Analysis of Variance (ANOVA), Student t-test, and Pearson's linear correlation. The tests were applied with a reliability of 95%. **Results:** Twenty-nine orthopedic surgeons responded to the questionnaire. The studied variables regarding domains were age and employment duration, which have a positive relationship with the environment and social relationships domains; income, which positively influences the level of independence and environment domains; and workload, which negatively influences the psychological domain. **Conclusion:** Orthopedic physicians had high scores in the WHOQOL-100 domains and, in their perception, good quality of life had higher scores compared to other professions.

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Introduction

Since the time when humans became recognizable, they have suffered health problems and have sought solutions for them. There have been very many reports on such actions. In modern times, humans have become institutionalized, and their knowledge has become grouped into so-called "schools". Medicine is no different in this regard: while it was solitary in the early days of the physician-philosophers, and mostly empirical, today it is organized into schools that make it possible for thousands of young people in Brazil and around the world to become physicians and deal with life, death and all possible diseases on a daily basis.

Society's facilitated access to medicine, and to physicians in general, is one of the great advances of medicine. It is probably also one of the motives for concern among physicians, given that with this proximity, they have become more vulnerable than ever to the increasing demands that they should get things right, with ever fewer errors. It is impossible to practice medicine without an awareness of benefit and harm, without a desire to serve and be useful, or without love for human beings. Medicine is a science when the biological aspects of human beings are studied and an art when its knowledge is applied to benefit mankind.¹

In Brazil today, there are 180 medical schools from which around 15,500 physicians graduate every year. These will spread across Brazil, many without doing any other specialization. In many cases, they will be seeking economic stability, which is one of the main advantages of the profession, or at least one of the most celebrated advantages.² For many years, people who sought to study medicine were almost always attracted by the independence provided by the profession. Physicians, as liberal professionals, could develop their best abilities and adapt their work according to their individual lives and needs, lifestyles and personalities. However, today, physicians as liberal professionals are almost extinct and they act defensively, with preoccupations relating to being sued for possible mistakes. The profession is now dominated by health insurers.³

It has been shown that today, the financial stability that previously was guaranteed to individuals graduating in medicine is not longer accompanied by a satisfactory return in terms of salary. To achieve a reasonable financial condition, professionals end up becoming overloaded, through subjecting themselves to a variety of jobs and on-call duties, thereby leading to technical deterioration of their practice.⁴

Specifically in the case of physicians who specialize in orthopedics and traumatology, for them to obtain the title of specialist in orthopedics and traumatology after their basic training of six years of medical school, they have the obligation to undergo specialization training for a minimum of three years, at healthcare services recognized by the Brazilian Society of Orthopedics and Traumatology (SBOT). Currently, there are around 155 of these services, which produce approximately 400 trained orthopedists every year. After these three years of accredited medical residence, these physicians also need to go through a theoretical-practical test applied by the society.

After approval, they can be enrolled as "specialists".⁵ Thus, in addition to all the waiting and anxieties of becoming physicians, prospective orthopedists still have to undergo tests to be considered suitable and finally achieve economic stabilization and the satisfaction of practicing their profession. In the state of Mato Grosso do Sul, there are 117 physicians who are specialists in orthopedics and traumatology⁶ and, of these, 74 live in the state capital and 43 elsewhere in the state. They are composed of 113 men and four women. After receiving the title of specialist in orthopedics and traumatology, many of these professionals still continue studying and improving their skills, given that the SBOT not only recognizes general orthopedics but also today recognizes 12 subspecialties: hand surgery, spinal surgery, knee surgery, foot and ankle surgery, pediatric orthopedics, oncological orthopedics, shoulder and elbow surgery, osteoporosis and metabolic disease, orthopedic trauma, arthroscopy, hip surgery, reconstruction and bone lengthening.

The need for professionals to care for themselves is fundamental for professionals to be able to practice their profession, since care is a condition that results in physical and mental wellbeing, and these conditions make it possible to provide better care for others. This concern for physical and emotional wellbeing has increasingly become part of the day-to-day routine, which takes the name of quality of life (QOL). Such concerns are not restricted to physicians, given that all professions and strata of society today have the same thinking with regard to improving their "quality of life".⁷

When physicians present emotional disorders, they do not seek help, but self-medicate. Moreover, they neglect their general needs regarding health. Most physicians (70%) do not undergo regular check-ups and 60% of family physicians do not consult another physician. When they are actually diagnosed as presenting an illness, they aggregate multiple diagnoses. The rate of surgery among physicians is three times greater than that of the general population.⁸

Physicians' adherence to treatments prescribed by their colleagues is extremely poor. They refuse, ignore or deprecate their own treatment and are therefore mandatory targets for better assessment and actions in relation to QOL.

In order to think about improving the general QOL of orthopedists, it firstly needs to be understood what QOL is and what its implications are, and it needs to be quantified, so that it becomes possible with this information at hand to introduce positions and initiatives that might increase and improve QOL. This was the aim of the present study: to bring the concept of QOL to the eyes of orthopedists, through conceptualizing and exemplifying it, so that through recognizing it, they might concern themselves more with it and act towards improving it.

Thus, the objectives of the present study were to evaluate the general QOL of orthopedists in the state of Mato Grosso do Sul and to characterize the sample by means of the following sociodemographic variables: age; sex; time since graduation; marital status; specialization held, if any; timetabled workload; number of days worked per week; monthly family income; any other sources of income; home location; and perception of work in relation to other orthopedists. In addition, the aim was to evaluate QOL according to the domains of the WHOQOL-100 questionnaire: physical aspects, psychological aspects, level

of independence, social relationships, environment and spirituality/beliefs/religion; and to compare the QOL domains of WHOQOL-100 with the sociodemographic variables.

Material

All the professional orthopedists of the state of Mato Grosso do Sul who had the title of specialist in orthopedics and traumatology, as recognized by the Brazilian medical Association, and who were associates of the SBOT, were invited to participate in the study and received the questionnaires. These totaled 117 physicians (N = 117), of whom four were women and 113 were men, distributed between the state capital (74) and elsewhere (43), in 18 municipalities: Amambai, Aparecida do Taboado, Aquidauana, Bonito, Cassilândia, Chapadão do Sul, Corumbá, Coxim, Costa Rica, Dourados, Eldorado, Jardim, Naviraí, Nova Andradina, Paranaíba, Ponta Porã, São Gabriel and Três Lagoas. Twenty-nine orthopedists (all male) provided responses to the questionnaires.

The inclusion criteria for the study were that the subjects should have the title of specialist in orthopedics and traumatology and should agree to participate in the study.

Methods

The project for this dissertation was presented to the Research Ethics Committee of UCDB, for authorization of this study on human beings, as established through Resolution No. 196, of October 10, 1996, from the National Health Board. This approval was granted.⁹ Authorization from the SBOT in the state of Mato Grosso do Sul for conducting a survey among its members was also sought and granted.

After obtaining approval for the project from the Research Ethics Committee of UCDB, a pilot study was then conducted among three orthopedists in a clinic in Campo Grande, MS, was then conducted with the aim of ascertaining the suitability of the instrument.

The period for this cross-sectional survey was determined by the researcher to be from September 2009 to the end of December 2009 (four months). The questionnaires were all sent out or delivered in the same week of September and the period for participants to return them was prolonged until the end of December 2009. There were no other returns after this period.

So that anonymity was achieved, each of the invited participants was sent an envelope containing the following, at the private clinic or the hospital where they were known to work: letter from the SBOT signed by its president, giving the society's endorsement of the survey; informed consent statement, which needed to be signed or otherwise the filled-out questionnaire would be excluded; WHOQOL-100 questionnaire consisting of 100 self-explanatory questions. Some physicians received the envelope directly at their workplaces (private clinics), particularly those living in the state capital (Campo Grande). The remainder (i.e. the majority) received it through the post. Each participant signed the free and informed consent statement. Since the WHOQOL-100 questionnaire is self-explanatory, each participant filled it

out alone, without the presence of the researcher. After the questionnaires had been filled out, they were sent or taken personally in an envelope to the main office of the SBOT in Mato Grosso do Sul (when posted, the cost was borne by the participant, sent in an envelope without identification), located at the same office as the Medical Association of Mato Grosso do Sul, in Parque dos Poderes, Campo Grande, MS.

After the questionnaires had been received at the main office of the SBOT, the author separated out the consent statements from the questionnaire forms, so as to preserve anonymity. After this, the data were surveyed, the results were tabulated and the latter were analyzed. Because most of the municipalities in the state only have one orthopedist working there (except for Campo Grande, Dourados, Três Lagoas, Aquidauana, Corumbá, Nova Andradina and Ponta Porã), the home locations of the physicians who answered the questionnaire will not be described, in order to maintain confidentiality.

Two research instruments were used: WHOQOL-100 (World Health Organization Quality of Life - 100); and a sociodemographic questionnaire drawn up by the researcher, in which the following characteristics were investigated for subsequent correlation: age, sex, marital status, time since graduation, monthly family income, weekly timetabled workload in different settings, home location (capital or elsewhere), subspecialization held (if any), income sources other than medicine (if any) and each physician's perception regarding the volume of work, in relation to other orthopedists in the state.

WHOQOL-100 is just one of the questionnaires that exist in the arsenal of QOL surveys. A review study on QOL found that certain methodological difficulties exist because of the subjectivity of this topic, although these may be resolved through the large number of questionnaires that have already been validated in Brazil.¹⁰ The study mentioned 126 instruments for measuring different populations, and highlighted three of them: the *Medical Outcomes Study (MOS) Short Form-36 Health Survey (SF-36)*; the *World Health Organization Quality Of Life questionnaire (WHOQOL-100)*; and the *Quality Of Life (QOL) questionnaire*. WHOQOL-100 is an instrument for evaluating QOL that can be used both for healthy populations and for populations affected by illnesses and/or chronic diseases.¹¹

WHOQOL-100 was conceptualized by the Quality of Life Group of the Mental Health Division of the World Health Organization (WHO).¹² It initially contained 2000 questions and was then reduced first to 300 and later on to its final form of 100 questions. It was subsequently translated and validated by the Department of Psychiatry and Legal Medicine of the Universidade Federal do Rio Grande do Sul, Porto Alegre, in 1996. Brazil is one of more than 20 countries that apply this questionnaire, which demonstrates its transcultural applicability, with six distinct aspects: physical domain, psychological domain, level of independence, social relationships, environment and spirituality/beliefs/religion.¹³

Development of QOL measurement instruments is a complex and systematic concern within several fields of scientific knowledge, for investigating healthcare measures in a broader manner that goes beyond the traditional and insufficient parameters of morbidity and mortality.¹³

Starting from these premises, WHO proposed to develop an instrument that would fill this gap. Firstly, the fundamental characteristics that the construct would need to have were established: subjectivity; multidimensionality; bipolarity.

Within this context, the Group drew up WHO's definition of QOL: it is the individual's perception of his position in life, within the context of his culture and the value system in which he lives, and in relation to his expectations, standards and preoccupations.¹² The domains of WHOQOL include six aspects, subdivided into 24 facets to be investigated.

The WHOQOL questions were formulated for a scale of Likert-like responses, in relation to intensity (nothing – extremely), capacity (nothing – completely), frequency (never – always) and assessment (very dissatisfied – very satisfied; very poor – very good). Although these anchor points are easy to translate into different languages, the choice of intermediate terms presents certain difficulties of semantic equivalence in different languages. For example, between the anchors “never” and “always”, there may be “sometimes”, “frequently”, “very frequently”, “often”, etc.).

After the facets had been developed, the translation was done, followed by discussion of the translated version in Portuguese, in focus groups. The focus groups suggested that small modifications should be made in the way of formulating the questions. These suggestions were then discussed in a second bilingual panel, and thereafter incorporated into the final version of the instrument. The panel decided to maintain the suggestions that would furnish the simplest and most commonly used synonym, in order to facilitate understanding by the largest number of people.

The Portuguese version of WHOQOL-100 was discussed in four focus groups in the city of Porto Alegre, southern Brazil. The focal groups were composed by individuals who were representative of the demographic characteristics of the population that seeks Hospital de Clínicas, in Porto Alegre, in relation to sex, age, educational level and socioeconomic level. The aims of the focus groups were: 1) to review the formulation and comprehension of the 100 questions of the questionnaire; 2) to discuss the extent to which each of the facets affected people's quality of life; and 3) to investigate whether there might be other uninvestigated facets that would be important specifically for Brazil.

The list of facets was considered to be valid by the great majority of the participants. People from the community, patients (both inpatients and outpatients) and healthcare professionals all emphasized that the facets described in detail what each of the participants understood by quality of life within their settings.

The 24 facets (below) were considered to be relevant by all the groups. Patients and people from the community considered that the instrument also provided an opportunity for thinking about important aspects of their own lives in a systematic manner: an opportunity to “stop and think”. Some patients reported that the instrument brought out questioning that had the capacity to motivate them to seek deeper analysis with a psychologist, psychiatrist or their own physician. One patient with leukemia reported feeling anxious about some questions. At the end of this process, the following relationships between the facets and the domains were found:

Domain I Physical:

1. Pain and discomfort;
2. Energy and fatigue;
3. Sleep and rest;

Domain II Psychological:

4. Positive feelings;
5. Thinking, learning, memory and concentration;
6. Self-esteem;
7. Body image and appearance;
8. Negative feelings;

Domain III Level of independence:

9. Mobility;
10. Activities of daily living;
11. Dependence on medication and treatments;
12. Capacity for work;

Domain IV Social relationships:

13. Personal relationships;
14. Social support;
15. Sexual activity;

Domain V Environment:

16. Physical security and protection;
17. Home environment;
18. Financial resources;
19. Healthcare and social care: availability and quality;
20. Opportunities to acquire information and skills;
21. Participation in recreation/leisure opportunities;
22. Physical environment (pollution, noise, traffic, weather);
23. Transportation;

Domain VI Spiritual factors/religion/personal beliefs:

24. Spirituality/religion/personal beliefs.

The scores would be obtained using the SPSS statistical software (SPSS syntax), and manual scoring was not recommended, since this would increase the margin of error in calculating the scores.

So far, there is no normative population-based data for WHOQOL scores.¹²

For the statistical analysis on the data, three different statistical tests were applied: analysis of variance (ANOVA) to assess the orthopedists' general QOL; Student's t test for the orthopedists' sociodemographic variables in relation to the dimensions of the WHOQOL-100 questionnaire; and Pearson's linear correlation test in relation to the continuous variables. The tests were applied with a 95% confidence interval, which was equivalent to saying that all the results presenting values less than 0.05 ($p < 0.05$) were significant.

This study was divided into three parts: firstly, presentation of the orthopedists' general QOL, secondly, presentation and analysis of the sociodemographic variables; and thirdly and lastly, presentation of the basic statistics and analyses on the continuous variables in relation to the WHOQOL-100 domains.

Results

Twenty-nine male orthopedists provided responses for the sociodemographic and WHOQOL-100 questionnaires, during the period from September to December 2009. The majority of them had a subspecialization (65.5%) and worked on more than five days a week (53.6%). There was a balance between the work locations (consultation office 54.2%, hospital 45.8%); most of them lived exclusively from the income earned through medicine (58.6%); and the great majority had a perception that their workload was greater than the average among their orthopedist colleagues (69%).

In the present study, it was observed that the orthopedists had lower scores in the physical dimension (mean = 63.89) and environment (mean = 65.77) and higher scores in the dimension of level of independence (mean = 80.41) (Fig. 1).

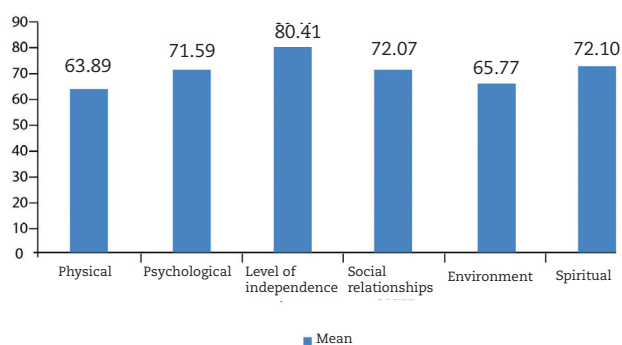


Fig. 1 - General mean for WHOQOL-100 among the orthopedists sampled, per dimension.

For better understanding of the domain scores, a graph is presented discriminating all the facets involved in the six domains of WHOQOL-100, with their respective scores, thereby expanding the view of these domains.

The physical aspect dimension was the one that showed the lowest values and, from analysis on Fig. 2, it can be seen that the mean was influenced by the facet of "pain", probably related to the mean age of the sample (46.70 years, with a minimum of 27 and maximum of 78), but did not go as far as influencing "energy" or "rest". The individuals surveyed presented good capacity and energy for work. It is important to highlight that there have been studies that indicated that changes to sleep and rest were the main agents for low QOL.^{14,15} A study among physicians and nurses at a neonatal ICU found much worse results than in the present study, with regard to the physical domain and environment, although the population observed in that study was predominantly female and was younger (mean age of 34.7 years).¹⁶ Contrary to the findings in the present study, it was found that the physical domain presented higher scores among community health agents (73.8) in a municipality in the western part of the state of São Paulo.¹⁷ There was a

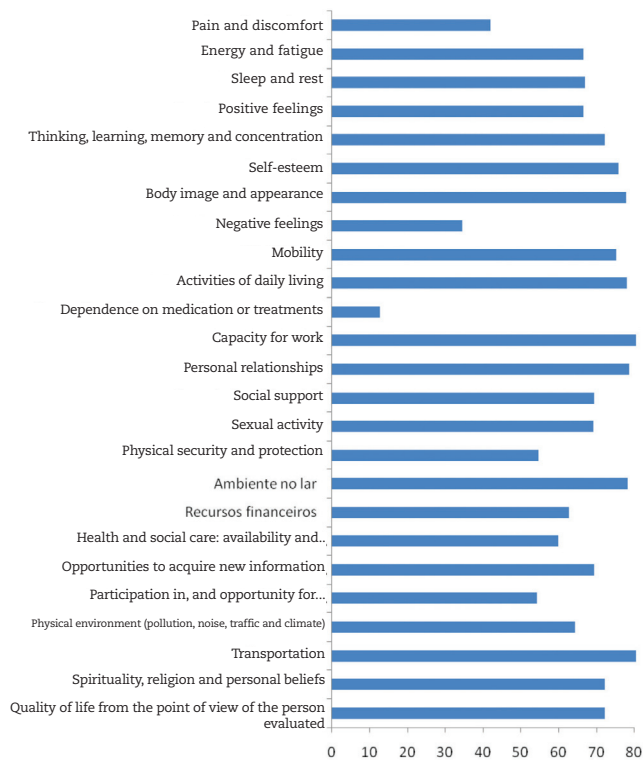


Fig. 2 - General score for WHOQOL-100 among the orthopedists sampled, per facet.

similar result among community health agents in the state of Minas Gerais (82.8).¹⁸ A higher score was found in the physical score among psychologists (71.32).^{19,20}

Regarding the environment dimension, low scores were found in the facets of security and recreation, which possibly reflected a delicate time in medicine in Mato Grosso do Sul, when physicians were often being assaulted at health clinics and hospitals, with wide coverage in the press, which even gave rise to movements among professional associations against this growing practice. The presence or absence of security and access to recreation and leisure may have been related to fatigue after exhausting working days, sometimes not so long, but with demanding work (surgery, for example). These data also appear for different reasons, given that in this study insecurity came from the precariousness and quantity of employment linkages, as well as the perceived low salary.²¹ On the other hand, the orthopedists presented high values regarding opportunities to acquire new knowledge, good levels of concentration, memory, reasoning and learning, good self-esteem and good perceptions of their body image. These factors may make the service provided more efficient and of better quality.²²⁻²⁴

Despite the vast amount of material on the construct of QOL, there is a scarcity of material in relation to WHOQOL-100 among physicians, both nationally and worldwide. After investigating in the websites of Scielo, Bireme, Universidade de São Paulo library, State Universidade de Campinas library, Google Academic and others, using the keywords "quality of life", "orthopedics" and "WHOQOL-100" (both in English and

in Portuguese), only a few texts relating to studies conducted using the WHOQOL-100 questionnaire were found, and none among orthopedists. Comparatively, most of the orthopedists presented higher values than those of other professions, despite all the difficulties of practicing medicine nowadays.

A study conducted among metalworkers was found, in which lower scores were seen in all the domains, including the general perception of QOL, with similarities only in the construct of level of independence.²⁵ The high scores among the orthopedists in the dimension of level of independence were based mainly on the orthopedists' high capacity for work and possibility of performing their daily tasks, although this same dimension presented a paradoxical low score regarding the participants' need for or dependence on medicines. This dependence may be explained by the orthopedists' high mean age, but the high workloads with physical and psychological demands, often with sleep deprivation, have to be mentioned. These situations have already been discussed in other studies, in which high rates of absenteeism, legal cases and irregular practices among physicians have been observed.²⁶ In other documents, on health agents for example, professional exhaustion and mental disorders have been cited as causes of use of medications like calmants, tranquilizers or antidepressants at rates of up to 17% of the population.²⁷

Using the WHOQOL-100 questionnaire, a study was conducted in which a group of patients with depressive symptoms was compared with a control group without any detectable abnormalities.²⁸ Comparison between the scores obtained by this control group and those of the group of orthopedists showed that the values were very similar. There were slight differences only in the spirituality domain, with advantage for the orthopedists, and in the physical domain, with advantage for the control group individuals. Comparison with the scores of the group with depressive symptoms showed that the orthopedists presented higher values in all the domains.

A survey using the WHOQOL-100 questionnaire applied to bank workers in the city of Ponta Grossa, in Paraná, with practically the same number of participants as in the present study, measured much lower scores in almost all the domains. Once again, only the construct of spirituality presented higher scores than those of the group of orthopedists.²⁹

Comparison with another study that was conducted among physicians of various specialties who were doing medical residence or improvement or refresher courses also showed that the orthopedists presented better scores in practically all the domains, with a difference again in the spiritual domain, such that improvement students had higher scores, in the range of 83.59, versus 72.10 for the orthopedists.²⁰

Here, it can be emphasized that the score obtained in the spiritual domain was at the average for the WHOQOL-100 domains for this group, i.e. not lower and not higher than the others, without statistical significance. Despite the divergence, this subject merits greater attention.

Citing Hippocrates, "Some patients, sensing that their illness is very severe and believing in the humanism of the physician, recover their health" (Decorum; Corpus hippocraticum, second century BC).³⁰ This observation relates to the importance of spirituality among physicians and consequently among

orthopedists. Providing comprehension, compassion and hope is the ancient basis of the medical profession and does not necessarily depend on the professional's faith. No effort should be spared in surmounting the conflicts that might come from differences in convictions and beliefs in the physician-patient relationship.

Although this matter is still controversial, some authors have indicated that spirituality and religiousness may have a positive role (especially in prayers for intercession) in relation to coronary diseases, arterial hypertension, anxiety, depression, immune function and mortality in general.³¹⁻³³ There is evidence that people with some type of spirituality present lower incidence of these diseases, live longer, recover faster when they are ill and present fewer complications during treatments. Reflecting on this, despite scientific controversy regarding the effects of spirituality on health:³¹ "It should remain clear that if these benefits come from an intervention or response by God to the appeals of prayer and spirituality, this is always going to be beyond what science can or cannot prove."

Returning to the results under discussion, it was observed that the group of orthopedists had higher scores than what was found in direct comparisons with other professions.

From Table 1, it can be seen that most of the group was formed by physicians with subspecializations (65.5%), who worked for more than five days per week (53.6%). There was a balance between workplaces (consultation office, 54.2%; hospital, 45.8%); the physicians mostly lived solely on income earned through medicine (58.6%); and the great majority had a perception that their workload was greater than the average for their colleagues (69.0%).

Table 1 - Sociodemographic characteristics of the orthopedists.

Variable	Values	
	n	%
Subspecialization	No	10 34.5
	Yes	19 65.5
Days worked	Up to 5 days	13 46.4
	More than 5 days	15 53.6
Main work location	Consultation office	13 54.2
	Hospital/outpatient clinic	11 45.8
Other income	No	17 58.6
	Yes	12 41.4
Perception of work (h/day), in relation to other orthopedists	Less/little	9 31.0
	More/a lot	20 69.0

Having or not having a subspecialization did not interfere significantly in QOL, with regard to any of the dimensions of WHOQOL-100 among the orthopedists sampled. In other words, the means for the domains were equal. Being specialists, and doing a subspecialization on the knee, hand, spine or any other specialty, did not make any difference. This leads

to the belief that, hypothetically, the greatest demand is for orthopedists, and this would probably be related to the low number of orthopedists in the state and the high demand for their services, especially in emergency and high complexity settings, which in this state is mainly limited to the Santa Casa hospital of Campo Grande, the University Hospital and the Rosa Pedrossian Regional Hospital. With the high demand for services in these hospitals, it is essential for on-call rosters to be correctly filled, and for this it is unimportant whether the orthopedist has or does not have a subspecialization. This gives rise to the possibility that even those who do not have a subspecialization may have earnings proportional to those who do.

For the analysis on the orthopedists in relation to the number of days of the week worked, two groups were formed: up to five days a week; and more than five days a week. No significant difference was detected in any of the WHOQOL-100 domains, i.e. the orthopedists' QOL did not depend on the number of days worked. One of the hypotheses for this might be that those who were working for more than five days a week were doing so on an on-call basis, with a salary addition in line with or proportional to the effort required. Another hypothesis is that this work yields pleasure and satisfaction among the orthopedists. Benevolence has great value in all cultures because of the primary need for human beings to live in groups and help each other, so as to ensure the survival and wellbeing of the community.³⁴ This result confirms previous studies that demonstrated that healthcare professionals were motivated through the influence of the factors of need for contact with patients and interest in helping one's fellows.³⁵

Conclusion

The orthopedists presented high scores in the WHOQOL-100 domains and, in their perception, good quality of life. Their scores were higher than in other professions.

Conflicts of interest

The authors declare that there was no conflict of interests in conducting this study.

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