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# Health-Related Quality of Life of Dentists in Public Dental Healthcare in Brazil

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## Abstract

This cross-section study aimed to evaluate the health-related quality of life in 230 dentists working in public dental healthcare service in Bahia, Brazil. The 36-Item Short Form Health Survey and a questionnaire were used covering work and socio-demographic information. Descriptive and multiple linear regression analysis were performed. Dentists had higher scores in Vitality (51,49) and Physical Functioning (51,35) domains; lower scores in General Health (43,25) and Social Functioning (47,78). Better Physical Component Summary was associated with Post-graduation in Public Health, absence of children, greater autonomy in work and contribution of work to the society, patients' access to the service and relationship with the patients ( $P<0.05$ ). Higher scores in Mental Component Summary were associated with white ethnicity, absence of children and satisfaction with the relationship with patients, self-evaluation of work, and courses and training offered ( $P<0.05$ ). The results alerts to the importance of work environment in personal life and occupational health.

**Keywords:** Quality of Life, Occupational Health, Dentists

## Introduction

In Brazil, the first National Conference of workers health, in 1986 set workers health as: decent living conditions; full employment; stable and well-paid work; opportunity of leisure; autonomy and representation; access to health services; among others. More recently, the Ministry of Health established the National Worker Health Policy, which sets the strategy of actions of the unified health system (SUS).

In dentistry, several policies were formulated and contributed strongly to the growth of the dental category in the public healthcare. The inclusion of Oral health teams in the family health program in 2000, and the National Oral health Policy, in 2004, promoted new job opportunities for dental professionals, the expansion and reorganization of the Basic Attention Healthcare and the insertion of Specialized Attention in public assistance,

with changes in traditional practices carried - among them: population subscription; completeness of reference and joint assistance; cross-reference to medium and high complexity services; humanization of care; multidisciplinary approach; stimulation of health promoting actions, social participation and professional's permanent education.

The effectiveness of this new form of care has as challenge the fact that the oral health team have received an education focused on biological issues, and healing techniques, with little emphasis on socioeconomic and psychological factors of the health-disease process, which hinders the achievement of relevant practices to the strategy, such as home visits and meetings with the spanning community for the development of prevention and promotion of health.

In addition, work in the public sector faced many problemn, such as: low wages; several types of employment relationship; infrastructure conditions and lack of intersectional initiatives to develop actions in the health sector itself that can be used as reference in several successful and innovative experiences for legitimating the importance of public action in the field. Since the risks at work consist, by one hand, in the interaction between work, satisfaction through it, and its organization conditions, on the other, the capabilities of the worker, their needs and culture, perceptions and experiences in the work environment can influence the yield and the quality of life.

The health related quality of life can be defined as the well-being level derived from the evaluation people make of various aspects of their life, considering the impact it has on their health. For Ebrahim (1995), the purpose of the measurements in health related quality of life are to monitor the health of the population, to evaluate the effect of social and health policies, invest resources in relation to needs and diagnose nature, severity, prognosis of disease and evaluate the effects of treatment. Currently, the most widely used form of evaluation has been the 36-Item *Short Form* Health Survey (SF-36), which gives emphasis to functional capacity and sense of wellbeing related to the health condition. The SF-36 provides a generic, subjective measure functional health and mental health from the individual point of view.

The aim of this study was to investigate the health-related quality of life of dentists working in the public health service of a large municipality, as well as to identify factors associated with it.

## Methods

A cross-sectional study with dentists in Salvador, Bahia, Brazil, conducted from in 2017. The inclusion criteria was the universe of active professionals of the municipality of Salvador operating in primary and secondary attention municipal health services, which include basic health units (UBS); family health Units (USFS); Dental specialties centers (CEO's), emergency room units (UPA's) and emergency dental treatment unities (UAO's). Exclusion criteria were: employees assigned to State and federal agencies and those who were not active in the period of data collection, that is to say, inactive, on vacation or away for licenses.

Out of the 374 dentists in the city of Salvador, 16 were deleted for exercising administrative functions and 18 for being away or serving licenses, corresponding to an eligible population of 340 professionals. An objective questionnaire was used, structured with 71 multiple choice questions, divided into three blocks: participant's characterization (socio-demographic and occupational aspects), work process evaluation and health related life quality evaluation. The measurement of this came through the 36-Item Short Form Health Survey (SF-36) which is a generic tool for the evaluation of health-related quality of life, composed of 36 items included in eight scales. The eight scales – functional capacity (PF), Physical (RP), pain (BP), General State of health (GH), Vitality (VT), social aspects (SF), emotional aspects (RE) and Mental Health (MH) and two health summaries (Summary of Contents Health and physical health Mental) were generated by Quality Metric Health Scoring 4.5 Software Outcomes™. Subsequently, the raw scores were normalized, based on an average of 50 and a standard deviation of 10, leading to the general population of the United States as a reference. Standardized scores allow you to compare schedules and summaries of each other components.

The data was collected through the instrument response without interference of the researcher in the following strategies: visit to the health units with Dental Service in the municipality of Salvador; district health team

meetings; education meetings and virtual questionnaire filling by professionals who had no opportunity to do it in person. The continuous variables were analyzed descriptively, with the presentation of the measures of central tendency and dispersion, and the absolute and relative frequency of categorical variables. For the modeling process, we used multiple linear regression, the saturated model by the method of backward, keeping to the template variables that presented  $<0.05$  p-value and contributed to the adjustment of the model. The adjustment was calculated using the analysis of variance of the waste and the R-set to identify the percentage of adjustment model. This study was approved by the Research Ethics Committee of the medical school of Bahia opinion number 955.707.

## Results

Out of a universe of 340 dentists in the city of Salvador, 230 responded to the survey, representing a response rate of 67.65% of the population. In the socio-demographic and occupational profile, it comprised 60.43% of people aged less than or equal to 39 years, white/yellow or other (53.91%) and 65.22% of married people or with a stable relationship. The majority of individuals who participated in the survey had children (56.52%), totaled more than 10 years of a bachelor degree in dentistry (64.35%) and had a work journey of 40 hours per week (52.61%). Prevailed (98.26%) permanent professionals who had graduated in public institutions (83.04%) and 30.87% had a graduate degree in Collective health, Public Health or Family health care. 52.61% acted at the same time in the private sector and 53.91% had 06 years or more of experience in public service.

The scores of the SF-36 domains were close to the average. The pain (BP), general state of health (GH), social aspects (SF), emotional aspects (RE) and Mental Health (MH) scores were low, showing a bad quality of life in these areas. Only the domains functional capacity (PF), physical (RP) and vitality (VT) had above-average scores, representing good health-related quality of life. The most affected was the GH ( $43.25 \pm 1.71$ ) that along with PF, RP, BP contributes substantially to the construction of the measure of Physical Component summarized (PCS), also low ( $48.97 \pm 6.01$ ). The measure summarized for the Mental Component (MCS) ( $48.57 \pm 9.90$ ) that is composed mainly by VT, SF, MH and RE indicates a bad health related quality of life of the dentists in the city (Table 1).

**Table 1** SF-36 normalized scores (mean  $\pm$ SD) of dentists in public health system from Salvador, Bahia, Brazil, 2017. (n= )

SF-36 Domain/ Component Summary	Normalized Score	Crude Score
Physical Function (PF)	51,35 $\pm$ 6,58	86,20 $\pm$ 15,71
Role Physical (RP)	50,37 $\pm$ 9,02	79,24 $\pm$ 31,88
Bodily Pain (BP)	48,48 $\pm$ 8,96	66,67 $\pm$ 20,93
General Health (GH)	43,25 $\pm$ 1,74	55,67 $\pm$ 3,72
Vitality (VT)	51,49 $\pm$ 8,92	60,15 $\pm$ 18,86
Social Functioning (SF)	46,78 $\pm$ 11,06	76,14 $\pm$ 25,47
Role Emotional (RE)	49,84 $\pm$ 9,79	82,61 $\pm$ 30,95
Mental Health (MH)	48,46 $\pm$ 9,33	72,50 $\pm$ 16,43
Physical Component Summary (PCS)	48,97 $\pm$ 6,01	71,94 $\pm$ 13,78
Mental Component Summary (MCS)	48,57 $\pm$ 9,9	72,85 $\pm$ 18,53

Potential socio-demographic and occupational variables have been worked and those that were statistically significant ( $p < 0.05$ ) for the PCS of the SF-36 were: individuals with graduate degrees in Public Health and Family health care had a higher score; the dissatisfaction with the access type of patients to health unit (organized

or spontaneous demand) influenced negatively the result; professionals who judged to have autonomy in worker process had the highest score. Those who were dissatisfied with the relationship with patients had lower score while those who were satisfied with the work contribution to society had a higher score for PCS (Table 2).

**Table 2** Multiple linear regression of the Physical Component Summary (SF-36) with socio-demographic and occupational characteristics of dentists in public health system from Salvador, Bahia, Brazil, 2017. (n= 230 )

Variable	n(%)	coefficient	Pvalue
<b>Have children</b>			
Yes	130 (56,52)		
No	100 (43,48)	-1,46	0,05
Post-graduation in Public Health		1,53	<b>0,03</b>
Yes	71 (30,87)		
No	159 (69,13)		
Cooperation between the hierarchical levels		-1,48	0,06
satisfied	92 (40)		
dissatisfied	138 (60)		
Patient access to oral health care		-3,28	<b>0,00</b>
satisfied	95 (41,3)		
dissatisfied	135 (58,7)		
Autonomy at Work		2,21	<b>0,01</b>
satisfied	93 (40,43)		
dissatisfied	137 (59,57)		
Relationship with patients		-1,99	<b>0,04</b>
satisfied	178 (77,39)		
dissatisfied	52 ( 22,61)		
Contribution to society		1,97	<b>0,03</b>
satisfied	150 (65,22)		
dissatisfied	80 (34,78)		

In relation to the MCS of the SF-36 in this population, the variables that were statistically significant ( $p < 0.05$ ) on the final modeling were: white individuals, as well as those who did not have children. In relation to the labor process, satisfaction with the relationship with patients, with the self-evaluation of the work, the labor capacity and with courses and training provided showed positive influence (Table 3).

**Table 3** Multiple linear regression of the Physical Component Summary (SF-36) with socio-demographic and occupational characteristics of dentists in public health system from Salvador, Bahia, Brazil, 2017. (n= 230 )

Variable	n (%)	coefficient	P value
Skin color		2,50	<b>0,03</b>
Black or brown	106 (46,09)		
Others	124 (53,91)		
<b>Have children</b>		2,92	<b>0,02</b>
Yes	130 (56,52)		
No	100 (43,48)		
Relationship with patients		4,92	<b>0,00</b>
satisfied	178 (77,39)		
dissatisfied	52 (22,61)		
Self-evaluation for work		4,17	<b>0,00</b>
satisfied	149 (64,78)		
dissatisfied	81 (35,22)		
Labor Capacity		4,70	<b>0,00</b>
satisfied	134 (58,26)		
dissatisfied	96 (41,74)		
Courses / trainings conducted by management		3,21	<b>0,02</b>
satisfied	53 (23,04)		
dissatisfied	177 (76,96)		

## Discussion

The impact of dental activity on quality of life referred to by dentists has been studied by various authors. Within the public service, they found good self-perception level of quality of life and satisfaction with health research that used instruments different from the current research, which is unprecedented in dentistry.

The health-related quality of life measured by the Short-Form 36 Questionnaire (SF-36) shows score near the average in all areas. The few domains that were above the average were functional capacity ( $51.35 \pm 6.58$ ), Physical ( $50.37 \pm 9.02$ ) and Vitality ( $51.49 \pm 8.92$ ) which was the largest domain score while general health ( $43.25 \pm 1.71$ ) presented the lowest score.

The Physical Component Summary (PCS) was very similar, but higher than the Mental Component (MCS) with below-average scores ( $48.57$   $48.97 \pm 6.01$  and  $\pm 9.9$ , respectively), which signals a bad health related quality of life of dentists. This finding does not agree with study that found that the average Physical Component score (PCS) was lower than the Mental Component (MCS) at 286 workers of hospitals.

In relation to other research conducted in Brazil and in the world with health professionals, the current one showed better scores of the SF-36 better than Cacciari et al. (2013) in all areas. The results found in functional capacity and physical aspects were more than 20 points higher than the study conducted in the State of Paraná and can be justified by the fact that the latter has included 34 nurses in readjustment and retraining, while in Salvador the individuals were healthy.

In a close reality, the Freire et al. (2015) research with 59 professionals of Pernambuco and Bahia showed similar results in the areas of functional functionality(PF), pain(BP), Emotional aspects(RE) and superiority of

the health related quality of life measure. In the areas of Physical aspects(RP), Vitality(VT), Social Function(SF) and general health state(GH), area with the most discrepant scores, because while the Freire et al. (2015) research was 83,20 score, the Salvador one had a 55,67 score, signaling a bad health related quality of life.

Studies conducted in Spain, for your time, show that the economic and cultural difference is revealed in health-related quality of life of health professionals. The research of Suñer-Soler et al. (2012) and Fernandez-Prada et al. (2014) showed higher scores to those in the current study in almost all areas. The difference of the results should be weighted by the peculiarities of each profession, as dentistry has as occupational risks exposure to infectious diseases and equipment and instruments without obeying the ergonomic criteria, among others.

Among the potential variables associated to health related quality of life, it can be noted the greater participation to those related to the work process and the satisfaction. However, in the present study, as well as in the Joslin et al. (2014) study, age was not related to any component, with ethnicity and having children being the socio-demographic variables under influence on the Mental Component (MCS).

Lin et al. (2015) concluded that the worker's performance influences in his health related quality of life, which was corroborated in the found results, since the work capacity was statistically significant for the dentists' Mental Component (MCS).

Although the present study is cross-sectional, the under average result of the health related quality of life, warns that the inclusion of dentists in the public sector does not exclude the possibility of dissatisfaction with the work process that might generate alterations on the professionals' physical and emotional health, which may compromise the quality of the service provided to citizens.

## Conclusion

The result shows a low health related quality of life in dentists of the public sector. The interference of occupational variables in this process draws attention to the importance of the workplace in personal life, well-being and professional's health; and to the need of promoting policies in the area of worker's health.

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