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Original Article

Evaluation of Quality of Life and Depression in Nursing Technicians and Nursing Assistants

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The aim of this study was to evaluate the quality of life (QoL) and depression, and relate them to the sociodemographic characteristics of nursing technicians and nursing assistants in a private hospital. This was an epidemiological and cross-sectional study. The number of technicians and assistants who participated in this study was 266. The instruments used were the WHOQOL-BREF and the Beck Depression Inventory. The evaluation of quality of life of nursing technicians and assistants showed similar values to those found in individuals with chronic diseases. The presence of health problems led to higher indices of depression and lower QoL scores in the general and psychological domains and correlated to labor activity. Night-shift workers had higher scores of depression. Understanding factors, related to professional activities, which trigger health problems and alter quality of life, can provide tools in the search for alternatives to remedy or mitigate their effects.

Descriptors: Quality of Life; Nursing, Team; Depréssion.

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Avaliação de qualidade de vida e depressão de técnicos e auxiliares de enfermagem

O objetivo deste estudo foi avaliar a qualidade de vida (QV) e depressão e relacioná-los às características sociodemográficas de técnicos e auxiliares de enfermagem de um hospital privado. Trata-se de estudo epidemiológico e transversal. A quantidade de técnicos e auxiliares que participaram deste estudo foi de 266. Os instrumentos aplicados foram o WHOQOL-bref e o inventário de depressão de Beck. A avaliação da qualidade de vida dos técnicos e auxiliares de enfermagem apresentou valores próximos àqueles encontrados em indivíduos com patologias crônicas. A presença de problemas de saúde levou a maior índice de depressão e menor escore de QV no aspecto geral e psicológico e se correlacionaram à atividade laboral. Trabalhadores do período noturno apresentaram escores mais elevados de depressão. Conhecer fatores desencadeantes dos problemas de saúde e alteração da qualidade de vida, relacionados às atividades profissionais, pode instrumentalizar a busca de alternativas para sanar ou minimizar seus efeitos.

Descritores: Qualidade de Vida; Equipe de Enfermagem; Depressão.

Evaluación de la calidad de vida y de la depresión de técnicos y auxiliares de enfermería

El objetivo de este estudio fue evaluar la calidad de vida (CV) y depresión, y relacionarlos a las características sociodemográficas de técnicos y auxiliares de enfermería de un hospital privado. Se trata de un estudio epidemiológico y transversal. La cantidad de técnicos y auxiliares que participaron de este estudio fue de 266. Los instrumentos aplicados fueron el WHOQOL-bref y el inventario de depresión de Beck. La evaluación de la calidad de vida de los técnicos y auxiliares de enfermería presentó valores próximos a aquellos encontrados en individuos con patologías crónicas. La presencia de problemas de salud llevó a un mayor índice de depresión y menor puntaje de CV en el aspecto general y psicológico; también se correlacionaron a la actividad laboral. Los trabajadores del período nocturno presentaron puntajes más elevados de depresión. Conocer los factores desencadenantes de los problemas de salud y de alteración de la calidad de vida, relacionados a las actividades profesionales, puede instrumentalizar la búsqueda de alternativas para sanar o minimizar sus efectos.

Descriptores: Calidad de Vida; Grupo de Enfermería; Depresión.

Introduction

The term quality of life (QoL) is used by various segments of society. It covers subjective and objective aspects and denotes the need for humans to seek internal and external equilibrium.

According to the World Health Organization (WHO), QoL is the "individual's perception of their position in life, in the context of the culture and value systems in which they live in relation to their goals, expectations, standards and concerns"[1].

In the *World Health Organization Quality of Life (WHOQOL),* the specific QoL group of the WHO, there was concern in developing a cross-cultural instrument for international use, so, initially, a QoL instrument consisting of 100 questions (*WHOQOL–100*) was created. However, due to the need for a brief instrument that demanded little time to fill in, the group developed a shortened version, called *WHOQOL-bref,* which contains 26 questions, with scores ranging from 0 (worst state) to 100 (best condition)[1].

Few studies have evaluated the QoL of health professionals. Studies are rare regarding nursing technicians (NT) and nursing auxiliaries (NA). These professional categories were analyzed in a national study that used the *WHOQOL-bref* instrument. In the study there was a decrease in the environment (49.4), physical (53.1), psychological (60.8) and social relations (66.3) domains[2].

Nursing technicians and nursing assistants are susceptible to change in QoL because they interact, most of the time, with individuals who need care[3]. The working environment of these professionals is unhealthy, the shifts are alternated, and subordination and hierarchy exist. The hours are rigid, there is lack of autonomy, high turnover, disarticulation of collective defenses, constant physical exertion, exposure to biological agents and direct care of patients with different needs and complexities. Professionals are largely unrecognized in a labor market that has shown increased outsourcing and increased informality[4].

Besides the change of QoL, some studies carried out in public services with health professionals, highlighted aspects such as anxiety, stress, depression and burnout syndrome[5]. However, research evaluating these aspects of NTs and NAs is rare and in private services.

The issue of nursing staff was highlighted in a study conducted with 692 individuals from 23 public health units in Minas Gerais, where mental disorders were identified in 54.3% and neurotic disorders related to stress and somatics in 28.7%. Mental and behavioral disorders, due to psychoactive substance use were identified in 5.5%. The diagnoses (40.8%) were related to occupational diseases, especially depressive symptoms[6].

Depressive symptoms are characterized by depressed mood, loss of interest or pleasure, feelings of guilt, low self-esteem and sleep disturbances, impaired appetite and concentration. In more serious cases they can lead to suicide[7].

The extension of depressive symptoms is classified as depression. Currently it affects an average of 121 million people worldwide. In 2000, it occupied the fourth place among the chronic diseases and the second in the group aged 15 to 44 years. The projection for 2020 is that this pathology will occupy the second place in the ranking of years of life lost to disability. The social stigma, the lack of preparation in diagnosing the disease and the limited financial resources for public health expenditure[7] are factors that aggravate depression, prolonging the suffering, bringing personal, social, economic and professional impact and worsening the QoL.

The aim of this study was to evaluate the QoL and the prevalence of depressive symptoms among NTs and NAs. There are no studies among these professionals in particular, despite representing the largest contingent in the nursing category. In their professional practice they interact with patients and families, are subjected to difficult working conditions and face a lack of professional recognition.

Materials and Methods

This was an epidemiological, descriptive, analytical, cross-sectional study, carried out in a large, general, private hospital located in Sao Paulo. The project was approved by the Research Ethics Committee of the hospital where the data were collected and the Federal University of São Paulo (UNIFESP). All participants signed a free prior informed consent form and were informed about their rights, in accordance with Resolution 196/96 of the National Research Council.

The population eligible for the study consisted of 269, covering all NTs and NAs, predicting that refusals could occur at the time of invitation to participate in the survey, due to the peculiarities of the theme of the study. The participants surveyed worked in the areas of the medical-surgical clinical unit (106), the intensive care unit (88), the semi-intensive care unit (30), and the emergency room (45). In the medical-surgical clinical unit, two participants were excluded due to sick leave, and in the intensive care unit, one due to refusal to participate in the study, totaling 266.

The data collection instruments and questionnaire were self-administered in the workplace. The semistructured questionnaire contained 20 questions that explored the biosocial, demographic and economic variables that could influence the QoL and the prevalence of depressive symptoms. The *WHOQOL-bref* and the *Beck* Depression Inventory, translated and validated for Portuguese[8-9], were self-administered. Each participant took, on average, 30 minutes to complete the survey.

The *WHOQOL-bref is a* self-assessment instrument that considers the past two weeks experienced by the research subject. It consists of 26 questions, divided into four domains, and includes two general questions about QoL. The two QoL questions are: 1) "how would you rate your quality of life?" and 2) "how satisfied are you with your health?". Domain 1 (physical) evaluates pain, discomfort, energy, fatigue, sleep, mobility, dependence on medication or treatment, and work capacity. Domain 2 (psychological) evaluates positive and negative feelings, memory and self-esteem. Domain 3 (social relationships)

evaluates supportive people, sexual activity and personal relationships. Domain 4 (environmental) evaluates physical security and protection, home environment, financial resources, participation in recreational activities and leisure, physical environment (pollution, noise, climate, transport and traffic), opportunities to acquire new information, and skills.

The questions of the instrument use the *Likert*-type response scale with intensity (none - extremely), capacity (nothing - completely), frequency (never - always) and evaluation (very dissatisfied - very satisfied, very bad - very good) scales.

The Beck Depression Inventory (BDI) was developed in 1961 and was translated and validated in Brazil in 1998. It is a self-assessment instrument, recognized in diverse countries and used with clinical patients and the general population. It consists of 21 groups of statements that correspond to numeric values of 0 to 3. It can evaluate attitudes and depressive symptoms that reflect the current state of the subject: sadness, pessimism, sense of failure, lack or loss of satisfaction, feelings of guilt, sensation of punishment, self-deprecation, self-accusation, suicidal ideation, crying spells, irritability, isolation or social withdrawal, indecisiveness, distortion of body image, inability to work, sleep disturbances, fatigue, loss of appetite, weight loss, somatic preoccupation and loss of libido.

For the statistical analysis, the software *Statistical Package for the Social Sciences for Windows* (SPSS) version 11.0.1 was used. The correlations between QoL and BDI scores were described using the Pearson product-moment correlation coefficient. To identify factors associated with QoL and BDI scores simple (univariate approach) and multiple (multivariate approach) linear regression models were adjusted. In these models, the independent variables were the social, demographic, health and work characteristics, and the dependent variables were the scores. The variables with $p>0.20$ in the univariate analysis were included in the multivariate models. Associations with p values less than 0.05 were considered statistically significant.

Results

Of the 266 NTs and NAs in Table 1, the majority were female (57.1%), were taking or had completed graduate education 41%, and 63.5% were homeowners. Vehicle owners constituted 73.7% and they spent an average of 2.4 hours commuting to and from work. Approximately half the sample worked at night, and had more than one job.

Table 1 - Social, demographic and economic characteristics of nursing technicians and nursing assistants in a private hospital. Sao Paulo, 2006

Characteristics	n (%)	Mean (sd*)	Variation (min-max)
Age (years)		33.6 (6.9)	21–54
Sex - female	152 (57.1)		
Marital status			
Single	81 (30.5)		
Married	157 (59)		
Separated/divorced/ widowed	28 (10.5)		
Schooling			
Elementary/junior high	24 (9)		
High school	133 (50)		
Higher incomplete	88 (33.1)		
Higher complete	21 (7.9)		
Number of family members		3.5 (1.4)	1–8
Have children	178 (66.9)		
Number of children		1.2 (1.1)	1–4
Hours of sleep		6 (1.5)	3–10
Household income R$**		3.440 (1.412)	1.527–10.180
Home owner	169 (63.5)		
Vehicle owner	196 (73.7)		
Hospital unit of work			
medical-surgical clinical unit	104 (39.1)		
Intensive care unit	87(32.7)		
Emergency room	45 (16.9)		
Semi-intensive care unit	30(11.3)		
Hours of work			
Dayshift	144 (54.1)		
Nightshift	122 (45.9)		
Number of jobs			
One	126 (47.4)		
Two or more	140 (52.6)		
Time working in nursing (years)		10 (5.3)	1–30
Length of commute (hours)		2.4 (1.45)	0.7-6

* sd = standard deviation

** For this item 24 individuals (9%) did not answer the question

In Table 2 it was observed that many respondents had health problems (47.4%), and of these only 51.6% had received medical attention. The main health problems reported by the 126 NTs and NAs were: chronic problem in the feet (12.6%), back pain (12%), depression (7.7%), rhinitis and allergies (7.7%) arterial hypertension (6.6%), gastritis and esophagitis (6.6%),

chronic nervousness or emotional imbalance (5.4%), skin disease (5.4%), heart problems (4.9%), joint problems (3.8%) and others of lower percentage.

Table 2 - Health characteristics of nursing technicians and nursing assistants in a private hospital. Sao Paulo, 2006

Health characteristics	n (%)
Evaluation of health	
Excellent	32 (12)
Very good	56 (21.1)
Good	121 (45.5)
Not good or bad	41 (15.4)
Bad	13 (4.9)
Very bad	3 (1.1)
Have health problems	126 (47.4)
Number of health problems*	
One	84 (66.7)
Two	33 (26.2)
Three or more	9 (7.1)
Monitoring the health problems*	65 (51.6)

* Percentages of the 126 individuals who have health problems.

The *WHOQOL-bref* scale of values ranges from 0 to 100. In Table 3 it can be observed that the environment, physical and overall quality of life domains had the lowest mean scores in this group.

In the general QoL questions of the *WHOQOL-bref,* "How would you rate your quality of life?" and "how satisfied are you with your health?", the score ranges from 1 to 5 and obtained a mean of 3.46 for the first question and 3.74 for the second.

Table 3 - Quality of life scores, according to the *WHOQOL-bref* domains of 266 nursing technicians and nursing assistants in a private hospital. Sao Paulo, 2007

Domains – *WHOQOL-bref*	Mean (sd*)	Variation
Physical	54.7 (11.7)	21.4–82.1
Psychological	62.3 (11.7)	29.2–87.5
Social relationships	66.3 (18.9)	16.7–100
Environmental	53.8 (13.6)	9.4–93.7
General quality of life	57.8 (10.8)	19.8–85.4

*sd = standard deviation.

The result obtained from the BDI of NTs and NAs showed that 14 respondents (5.3%) had a score above 20, indicating the presence of depression, 27 (10.2%) had scores between 16 and 20, consistent with dysphoria and 225 (84.6%) scored lower than 15, which equates to individuals without depression.

The study variables, hours of work and having health problems correlated significantly to the BDI. Among respondents who had a score compatible with dysphoria (27) and those that indicated depression (14), 15 (55.5%) and 11 (78.6%) worked at night and 23 (85.2%) and 11 (7.6%) had health problems, respectively.

A negative correlation between the BDI scores and the *WHOQOL-bref* domains was found (r = -0.38 physical domain, r = -0.46 psychological domain, r = -0.50 social relationships domain and r = -0.44 environment domain).

Table 4 - Results of the multiple linear regression analysis between the *WHOQOL-bref*, Beck Depression Inventory and sociodemographic variables and health

Dependant variables	Independent variables	Coefficient	SE*	p-value	R^2
BDI	Constant**	7.18	0.80	<0.001	0.159
	Vehicle owner	-2.52	0.87	0.004	
	Health problem	5.20	0.77	<0.001	
QoL general	Constant**	68.62	1.40	<0.001	0.322
	Beck	-0.74	0.09	<0.001	
	Health problem	-2.66	1.18	0.025	
	Length of commute (min)	-0.03	0.01	0.001	
Physical	Constant**	50.96	3.27	<0.001	0.166
	Beck	-0.61	0.09	<0.001	
	Age	0.25	0.16	0.006	
Psychological	Constant**	69.47	1.02	<0.001	0.232
	Beck	-0.69	0.10	<0.001	
	Health problem	-3.71	1.35	0.006	
Social relationships	Constant**	76.97	1.54	<0.001	0.245
	Beck	-1.38	0.15	<0.001	
Environmental	Constant**	62.92	2.83	<0.001	0.297
	Beck	-0.76	0.11	<0.001	
	Income (R$)	0.001	0.001	0.019	
	Length of commute (min)	-0.05	0.10	<0.001	

*SE=standard error; **Constant: intercept of the regression model represents the mean score when the other variables take the value zero.

The multiple linear regression models initially included all variables with p<0.20 in the univariate analysis. The variables that remained significant are presented in Table 4. The presence of health problems led to a higher rate of depression and lower QoL in the general and psychological domains. Being a car owner was important to reduce the rate of depression. The longer the commute to and from work the lower the QoL general and environment score. It was also noted that, with increasing age and family income better physical and environment domains are presented.

Discussion

Women were predominant in this study (57.1%) among NTs and NAs, as occurs in other works in which the percentage was 85.5%[2] and 89.6%[5]. However, in these studies, the percentage of females was higher than in the present study. The difference can be explained by the fact that, at the institution where the study was conducted, there is recruitment policy of equal proportions of the sexes. In Brazil and other countries, nursing services, due to sociocultural factors, are considered suitable for women[5].

Regarding marital status, it was found that 59% had steady relationships, similar results to those found in a study with 269 nursing assistants[5] and differing from another study that showed a lower percentage (35.7%)[2].

Regarding schooling, 50% of interviewees had completed high school. Studies conducted in Sao Paulo[5] and Parana[10], with the same occupational categories showed a higher prevalence, 60.7% and 64.8% respectively. The percentage of NTs and NAs that were enrolled in higher education courses in the study group was 33.1% and 7.9% had already completed their course. Of the total of these two groups, 97% opted for nursing degrees. The high rate of graduates and the choice of nursing can be explained by Sao Paulo being the dynamic center of work and study in health.

In this study, 66.9% of respondents had children, with a mean of 1.2, a value lower than the 2007 national index of number of children. Another study with 105 nurses found 69.9% had children[10].

The mean number of family members was found to be 3.5, higher than the Southeast Region which, according to a national survey sample of households in 2006, was 3.1 people. Owners of their own residence and vehicle were 63.5% and 73.7% respectively. In Sao Paulo, between 1997 and 2007, the number of vehicles increased 74%, while the population grew by 14%. This corresponded to 1.8 inhabitants per vehicle in 2007[11].

The mean commuting time to and from work, presented in this study, was 144 minutes. The city of Sao Paulo is the largest metropolitan center in the country and has an average of 100km of congestion daily. It was found that 52% of the individuals studied had more than two jobs and 45.9% worked at night. When analyzing studies with other NTs and NAs, varying percentages of professionals who had two or more jobs (8%[5] and 32.5%[2]) were found.

In this study, the most altered domains of the *WHOQOL-bref* were the environment (53.8) and physical (54.7). In a study conducted with NTs and NAs in an intensive care unit, the environment domain score was 49.4 and the physical 53.1[2]. Social relationships was the domain with the highest score (66.3). The same value obtained from a national survey[2].

When the domains: psychological (54.7), environment (53.8) and social relations (66.3), in this study were analyzed they were found to be scored lower than the results obtained in a study with nurses in Chile[12], where the results of the three domains were also observed: psychological (66.6), environment (77.3) and social relations (71.9). The individuals evaluated in this study presented scores lower than those with chronic diseases such as rheumatoid arthritis who obtained scores in the physical domain of 62, psychological 66, social relationships 70 and environment 68[13]. Compared to other studies, the scores were lower in the physical and environment domains than people with schizophrenia (physical 57.3 and environment 55.4) and also lower than individuals with acquired immunodeficiency syndrome (physical 67 and environment 63.5)[14].

The lower score in the environment domain (53.8) can be related to the work environment, the tiring type of work, hierarchical submission and to the involvement that can occur faced with the physical and emotional frailties of patients[12]. A study in four hospitals of Londrina, PR, found that dissatisfaction, expressed by nursing professionals, with the work directly reflects the care provided[10].

The individuals in the study who owned their own vehicle had higher scores in the environment domain of *WHOQOL-bref*. In Western culture, material goods, such as automobiles, have connotations of *status* and personal achievement.

Health problems interfered negatively in all domains of the *WHOQOL-bref*. The most frequently observed problems were: chronic foot problems, back pain and

depression, which correlate to the work activities of NTs and NAs. Studies of nurses in Belgium and France showed that 60 to 80% of daily working hours are spent standing. Awkward postures such as inclining the body, squatting, carrying heavy loads and lift the arms occupy the remainder of the time. The distance covered by nurses ranged from 4 to 7 km, on average, per shift[15]. Other studies[4] related the origin of back pain in nursing staff to maintaining awkward postures, inadequate furniture, the transporting and handling of patients. Osteomuscular problems were the main reason for sick leave in the nursing team in a study performed in a hospital in Sao Paulo State[4].

Depression was mentioned as one of the three health problems most cited in this study. It ranks fourth in the classification of the most costly and fatal diseases. It is expected that over the next twenty years, it will move to second place, only lower than heart disease[7]. In this study, the NTs and NAs who had depression, according to the BDI, showed abnormalities in all domains of the *WHOQOL-bref.* The prevalence of depression in the NTs and NAs was similar to that found in the general population: 3 to 11%[16]. The NTs and NAs who worked at night had a higher prevalence of depression. Research conducted with 142 nurses, members of the *American Association of Critical Care Nurses (AACN),* has shown that shift work is a risk factor for developing depression[17]. Another study also showed that night-shift workers have poor dietary habits, consuming frozen and pre-cooked foods and caffeinated drinks, a disposition to heartburn, constipation and cardiovascular problems[18]. Older individuals in this study group had better physical scores. A study performed with the same professional categories[2] showed a positive correlation between older age and QoL.

It is noteworthy that the occupational categories of NTs and NAs, conforming to the training that exists in Brazil, are not found in other countries. Thus, in certain situations, the results of this study were compared with other professional categories.

Conclusions

Health problems interfered negatively in all domains of QoL and were shown to have a relationship with labor activity. Owning a vehicle, contrary to having health problems, had a positive influence in the environment domain.

The correlation between QoL and BDI revealed that the lower QoL the higher the BDI scores. The prevalence of depression found in NTs and NAs was found to be within the range of the general population. However, it was found that individuals who worked at night had higher scores for depression. The *WHOQOL-bref* scores of the NTs and NAs were close to those found in individuals with chronic diseases. This can lower the quality of care and increase the necessity for care for their own health.

Further research with NTs and NAs of private services needs to be performed. Health services should prioritize promotional and preventive measures for quality of life of their workers.

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